COFFEE

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COFFEE

(1462) *Frontispiece*

PITMAN'S COMMON COMMODITIES
AND INDUSTRIES

COFFEE

FROM GROWER TO CONSUMER

BY
B. B. KEABLE

REVISED BY
C. J. PARHAM

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COFFEE

CHAPTER I

INTRODUCTION

> Coffee !—which makes the politician wise
> And see through all things with half-closed eyes.
> —POPE.

THE popularity of coffee needs no emphasising, and yet it is only during the last 250 years that this beverage has come to be generally used in the civilised countries of Western Europe. How it came by that popularity and whether it is as popular as it was in years gone by are questions which might make us think. That it is not so popular is apparent when we realise that to-day the consumption per head of population is less than it was even fifty years ago, and if reports are at all true—alas ! it must be admitted that statistics of what was done before that time and certainly 200 years gone by are hardly to be relied upon—if such reports are true, then 200 years ago it was four times greater than it is to-day ! It has been stated that, during the reign of Charles II, there were no fewer than 3,000 houses in London opened for the sale and consumption of coffee ! These houses became the haunts of political intriguers and many had to be suppressed. *Tempora mutantur*—times have changed—we do not see political and other clubs or societies for the propagation of all the fads and eccentricities that are talked of at the present day meeting in coffee-houses, though, as the one exception to the rule, perhaps, the humble Chess Club mostly makes such its home.

But the popularity of this still most delicious of beverages has not been lost by the suppression of the houses where it was obtainable, for it is an evident fact, patent to all who have eyes to see, that the facilities for obtaining a cup of coffee at all hours of the business day, and of many of the hours which might be described as night, are far greater to-day than they were even twenty years ago; while the dividends paid by those companies formed for the supply of light refreshments (and coffee is no small part of those refreshments) testify to the lucrative nature of the business attached to the retailing of this stimulating and refreshing beverage. It is with the idea that all knowledge is power and with the hope that some of the facts and information given may lead to a larger consumption and more general distribution of coffee in the United Kingdom that the following pages are written. One other statement it would perhaps be well to make at this early stage, though it may be emphasised later on, namely, that coffee is not only a stimulant but a food. The Arab of the desert will travel for miles and for days with nothing in his wallet but a few dates and coffee, while one of our greatest food specialists, Sir James Crichton Browne, has said: "Concerning coffee, I believe it has not yet attained the popularity in this country to which its many merits entitle it. I hope to see a largely increased consumption of it. It is an aid to digestion. In moderate doses it stimulates the heart's action, and raises the arterial pressure. It quickens the circulation of the blood, and thus ridding the muscles of their waste products it increases their energy, and during their exercise diminishes their sense of fatigue. Messo has shown that under its influence the work of the first hour may be quadrupled. In coffee, and its gentle stimulating action, we possess one of the most efficacious means of contending with alcoholism. Coffee, too, supports under mental labour, and the delicious aroma of its essential oil, caffoel, has subtle physical effects that still await analysis."

Coffee is now one of the important plants of tropical agriculture, and the annual value of the product is enormous. It has been estimated that there are some 70,000 coffee estates in the world, and that they annually produce 15,400,000 quintals.[1]

To a greater degree than most other agricultural industries, coffee cultivation has been subject to strange vicissitudes. Though, as we shall see later, coffee of one kind or another is indigenous to many countries, it is generally conceded that the coffee of commerce was first used as a beverage, and was first exported, and the seed procured, from Abyssinia.

Perhaps it would not be out of place to mention an old story which gives the tradition of how its wonderful effects were first discovered. It is extracted from that very interesting book, *Folk Lore of the Holy Land.*

The origin of coffee-drinking is connected with various legends and superstitious ideas. The shrub on which the coffee-berry grows is said to be indigenous to Abyssinia, and the story runs that the virtues of the plant were discovered by accident. Fleeing from persecution, towards the end of the third century, a party of monks from Egypt found refuge in the Abyssinian highlands, where they settled and supported themselves by agriculture and the care of the flocks, which were entrusted in turn to the pastoral care of different brethren. One of these came to the prior one night with the strange tale that the sheep and goats would not go to rest in their fold, but were frisking and lively

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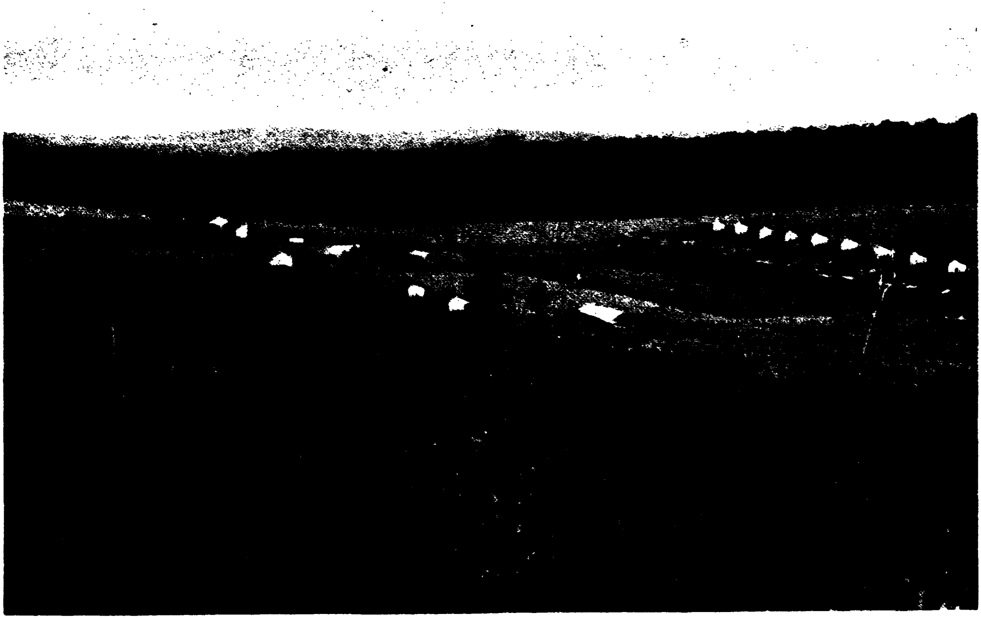
[1] A quintal = 100 kilogrammes.



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A " FAZENDA " WITH FOREST IN BACKGROUND

to such a degree that he feared that they had been bewitched. This state of things continued, in spite of prayers and exorcisms, for several days, till at last the prior resolved himself to herd the animals. Leading them out to pasture he observed what plants they browsed on, and thus discovered that their sleeplessness was the effect of the leaves of a certain shrub. Experimenting on himself by chewing some buds of the same plant, he found that he was easily able to keep awake during the long night-services which his form of religion prescribed. Thus was coffee discovered.

It was not at first used as a beverage, but eaten in the form of a paste, something like chocolate. It was introduced into Arabia in pre-Islamic times, probably not later than the time of the famous Crusade undertaken by Elesbaan, or Caleb Negus, the Nagash of Arab authors, in order to punish the Himyaritic Jewish ruler, Yusif Yarush, surnamed, " Dhu Nowas," who had been persecuting the Christians. When Mohammedans were prohibited the use of wine, its place was taken by decoctions of coffee-berries. The name " coffee " is derived from the Arabic Kahweh (pronounced Kahveh by the Turks), and in its primary sense denoted wine or other intoxicating liquors. " The City of Aden," says Crichton, " is the first on record that set the example of drinking it as a common refreshment about the middle of the fifteenth century. A drowsy mufti, called Jemaleddin, had discovered that it disposed him to keep awake, as well as to a more lively exercise of his spiritual duties." This is clearly a version of the story of the Abyssinian monks above given. Jemal-ed-din, according to Crichton, died A.D. 1470, " and such was the reputation which his experience had given to the virtues of coffee, that in a short time it was introduced by Fakreddin at Mecca and Medina." It seems, however, that it was not till the commencement of the sixteenth century that it was introduced to Cairo.

Its introduction caused a bitter theological controversy among the Moslems. In A.D. 1511 it was publicly condemned at Mecca by a conclave of the 'ulema, who declared its use contrary to Islam and hurtful both to body and soul. This decision of the learned was echoed at Cairo. All the warehouses where the "seditious berry" (bunn) was stored were purposely burnt down, the coffee-houses closed, and their keepers pelted with the sherds of their pots and cups. This was in 1524, but by an order of Selim I the decrees of the learned were reversed, the disturbances in Egypt quieted, the drinking of coffee declared perfectly orthodox; and when two Persian doctors, who had asserted it to be injurious to health, had been hanged by the Sultan's orders, the coffee-cup began its undisturbed reign. It now rules supreme in the East. If you want anyone, to whom it would be an insult to offer backshish, to do you a favour, you find that "a cup of coffee" renders him gracious and open to persuasion; and in the same way, if you want to get rid of an enemy, all you have to do is to get someone to administer "a cup of coffee" to him. This double usefulness of "a cup of coffee" is proverbial. Coffee-making and drinking among the desert Arabs are associated with observances which make it a quasi-religious ceremony. Only a man is allowed to prepare the beverage, and he must do it with the greatest care. The berries are roasted in a shallow ladle or pan (mahmaseh), and when half-roasted they are pounded in a stone or wooden mortar with a great pestle (mahbash). Whilst the pounding is proceeding a coffee-pot (bukraj) is placed on the fire. When the water boils the pot is taken off the fire and the coffee-meal is put into the hot water. It is then placed on the fire again, and when it has boiled up, the pot is again taken off, and then allowed to boil again a second and a third time. The coffee-maker, holding in his left hand a row of small cups placed one inside the other, then pours a little coffee into the topmost and rinses it with the liquid, which he then pours into the second and others in turn, rinsing them all in turn with the coffee he poured into the first cup. When he has rinsed the last cup he pours its contents into the fire as a libation to the Sheykh esh Shadhilly,[1] the patron of coffee drinkers. Then, and not till then, the drinking begins. Half a cupful is handed to the eldest and most honoured guest, and then a second cup, and so on to all others in turn. To offer a full cup is considered a studied insult, and so also is the offer of a third cup. The saying is, " The first cup for the guest ; the second for enjoyment, and the third for the sword."

Wherever a party of coffee-drinkers assemble, there the spirit of esh Shadhilly is present to keep them from harm, and in like manner when a bride is leaving her parents' house in order to be taken to that of her bridegroom, the keeper of a neighbouring coffee-house will show his goodwill by rushing out of his place of business and pouring a cup of coffee on the ground on the pathway at her feet in order to propitiate his patron saint and dispose him in her favour.

A large number of people were assembled in a village guest-house. Coffee was being prepared for them. Beside the fire stood a very large stock-pot, out of which the person who made the coffee replenished a smaller pot in which he boiled the liquor after adding fresh coffee-meal. He then, after the libation above

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[1] Who the mysterious Sheykh esh Shadhilly is I cannot tell, but must refer the reader to page 121 of the *Palestine Exploration Quarterly* for April, 1905.

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LABOURERS' COTTAGES ON A PLANTATION

described, handed a cup of coffee to the man nearest him, who out of politeness handed it to the one next him, and he in his turn gave it to the next, and so on, till it had passed all round the company untasted. The coffee-maker was surprised when the cup was returned to him untasted. Somebody suggested that esh Shadhilly must have had some hand in the matter, and had purposely prevented those present from tasting the coffee. Hereupon the coffee-pots were emptied out, when to the horror of all beholders the dead body of a venomous serpent (according to one version of this story, of a toad) fell out of the stock-pot. How it got in no one ever knew, but it was seen how Sheykh esh Shadhilly had protected his votaries.

Besides the large stock-pot it is no uncommon thing to have little brass or tinned copper pots standing near the fire ready to be filled from the larger vessel and set to boil. It is not always safe to partake of coffee made in such vessels, as they are not always kept clean and freshly-tinned, and sad cases of poisoning by copper oxide have happened through their use.

The proverbial saying above quoted, concerning the third cup, is illustrated by the following story: " During a famine in the early part of last century, a Bedawi skeykh left his encampment somewhere in the Gaza district, and went down to Egypt with men and camels to buy corn. Night came on after he had crossed the frontier, and about midnight, seeing a light in the distance, the sheykh, who had never before visited that part of the country, thought that some village must be near. He left his men and camels where they were and went to reconnoitre. The light proceeded from a house, the door of which was ajar. As he smelt coffee-berries roasting, he concluded it was a guest-house, and boldly entered. But he was mistaken. The only persons in the lighted chamber were an unveiled woman and a Memluk—her husband. The woman screamed and hid her face at sight of a man in the doorway, but her husband rebuked her fears and asked the stranger what he wanted. The sheykh replied that he had thought the place was a guest-house, but, since he was mistaken, would go away again. The Memluk, however, insisted on his remaining, and gave him a cup of coffee. When he had drunk this, his host offered him a second cup, which he accepted. A third cup he declined, although pressed to take it. Finding his solicitations useless, the Memluk drew his sword and threatened to kill the Bedawi unless he took the third cup. The man still refused, saying that he preferred being killed. 'Why ?' asked his grim host. 'Because,' answered the sheykh, 'the first cup is for the guest, the second for enjoyment, and the third for the sword. Though, indeed, I am a warrior, even as thou art, yet at present I am unarmed, seeing that I am here on business connected with peace and not with war.' 'Well,' answered the Memluk, sheathing his weapon; 'thy answer shows thee to be a true man. I took thee to be a skulking thief, but I see that I was mistaken. Remain under my roof as my guest.' The sheykh accepted the invitation, and when he told his host the purpose of his visit to Egypt, the latter, who had a great deal of corn for sale, transacted business with him, and for several years in succession supplied him and his tribe with grain. In the year 1811, however, the massacre of the Memluks, by the orders of Mohammed Ali, took place, and it so happened that the only person to escape was the one who figures in this story. He, it is said, managed to make his escape to the tents of his Bedawi friend, and was protected and harboured by him till the time came when he could return home without fear."

Though only tradition, the above shows that coffee was first used in the country from which to-day much of the so-called Mocha comes, and which must be counted as the cradle of the coffee trade. The seed was first taken to Arabia and so originally all the coffee consumed in Europe came from that country, then the West Indies, and, later, Java became pre-eminent, to be in turn absolutely beaten by Brazil, which at the present time produces some two-thirds of the world's total supply, and controls the market.

The history of coffee cultivation in Ceylon, to which we shall refer again later, affords a good illustration of these variations in fortune. In 1880 coffee was the principal crop of the colony, and worth some £3,000,000 annually. The attacks of a microscopic fungus ruined the plants, and the industry within a comparatively few years became of quite minor importance, and, in 1930–31, the total output amounted only to 112 cwt.

CHAPTER II

THE COFFEE PLANT

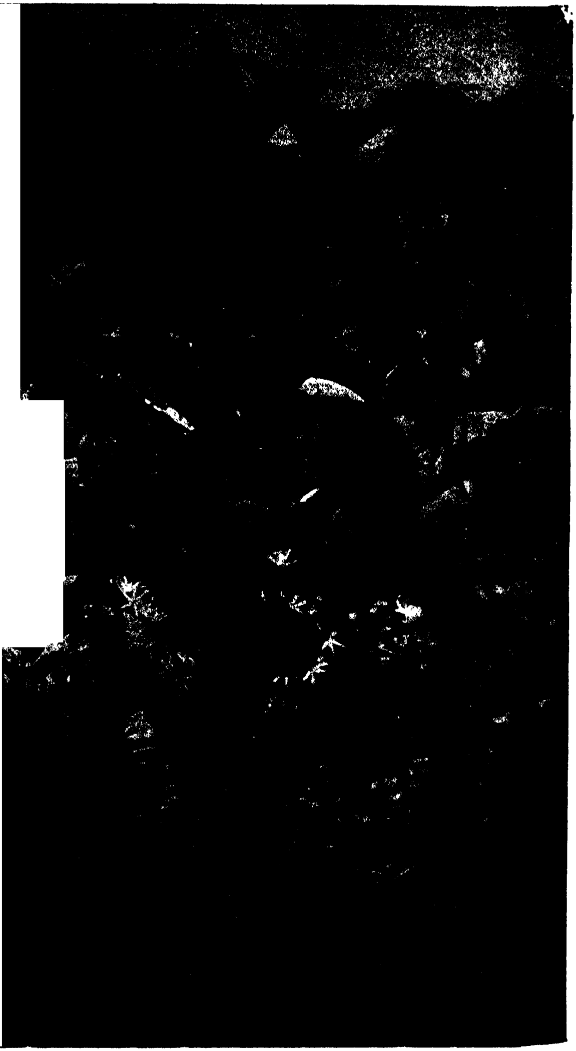
THE coffee plant belongs to the genus *Coffea* of the natural order *Rubiaceae*, an assemblage of plants including also the cinchonas, which yield quinine; gambier, furnishing the tanning material and dye of the same name; madder, and other useful plants. The order is most abundantly represented in the tropics, and our British representatives—the bed-straws, goose-grass, and madder—do not possess the characteristic features of their relatives of the warmer regions of the world. Altogether there are about eighty recognised species of *Coffea*, of which only two are cultivated to any great extent, namely Arabian Coffee (*Coffea arabica*) and Liberian Coffee (*C. liberica*), and of late years to a small extent, a third, Maragogipe Coffee (*C. Maragogipi*).

ARABIAN COFFEE

The beautiful Arabian coffee plant is a shrub attaining a height of fifteen or eighteen feet. Its leaves are of a fresh green colour, three to four inches in length, pointed and borne in pairs on the slender branches. The flowers occur clustered in groups of from four to sixteen in the axils of the leaves. They are white in colour and of fragrant odour. The fruits, or so-called "cherries," are at first a dark green, but as they ripen the colour gradually changes to yellow and then to red, and at last, when thoroughly ripe, to dark crimson. The outer portion of the fruit is fleshy like a cherry (whence the common name). Each fruit contains two seeds, covered in turn by a dry, smooth, straw-coloured husk, known as the "parchment." The seed itself is of a horny consistency, and should be perfectly familiar to everyone, as it is the unroasted coffee-bean of commerce, of characteristic greenish-grey colour. Between each seed and the parchment is a thin membranous covering known as the "silver skin." The two seeds or "beans" which each fruit contains lie with their flat sides together. It often happens, however, that only one of the beans attains full development, in which case it is no longer flat on one side, but more or less circular in section. Such beans form the so-called "pea-berry" coffee. They are carefully separated when the crop is gathered, because they invariably fetch a higher price. In Brazil there is a very rare variety known as the Hybrico-coffee, the fruit of which contains four or six seeds.

Liberian Coffee

The native country of Liberian coffee is not only the negro-republic of that name, but also the other parts of the West Coast of Africa, from Sierra Leone to Angola. Its cultivation is of much more recent date than Arabian coffee, because the product is less valuable; and its first appearance on the European market met with only very moderate success. The first Liberian plants were introduced into Ceylon and into Java after the fearful coffee-leaf disease broke out in the years 1873 and 1878 respectively. At first it was thought that the Liberian coffee plant was not susceptible to the malady; this opinion was, however, cruelly belied, although it was indeed less susceptible and offered greater resistance than its Arabian cousin. Hence some people have gradually learned to appreciate the Liberian plant, if not on account of any superior quality of its fruits, at any rate on account of its power of resistance and its vigorous growth—for which reason it has gradually



A LIBERIAN COFFEE PLANT IN FLOWER

gained a place for itself in Eastern countries by the side of the Arabian coffee. In this country and in America, however, the Arabian variety still holds its own.

The Liberian plant is distinguished from the Arabian by its greater height, which varies between eighteen and thirty-six feet, and also by the dimensions of its leaves, which sometimes attain the length of one foot. The flowers grow in clusters of six or eight together in the axils of the leaves, and exceed those of the Arabian plant in size, while the fruits are also much bigger, having a diameter of about an inch, and do not drop so readily when they are ripe as do those of the Arabian plant. The pulp is less rich in sugar and tougher than that of Arabian coffee, which makes the use of special machines necessary in its preparation.

The aroma of Liberian coffee is not very highly appreciated, which, considering its many other good qualities, especially its great fertility, is much to be regretted; for this reason people in Java have endeavoured to improve the species.

Attempts have been made to attain this end by artificial hybridisation, and for a long time, in Java as well as British India, the hope was cherished of obtaining a race which would unite the merits of Arabian and Liberian coffee. These efforts, however, have not proved very successful, although in a book published in 1899 M. A. J. Thierry records that in Java, owing to the labour of van Riemsdyck, a hybrid has been produced which, when grafted on to Liberian roots, is said to be resistant to coffee-leaf disease.

The grafting of Liberian on to Arabian coffee has not been successful; although the results of experiments in the opposite direction were quite satisfactory. Among other things, it was observed that such plants suffered less from the attacks of parasites, especially from those parasites—such as nematode worms—which frequently attack the roots of the Arabian coffee plant but do not usually attack Liberian coffee, than those which had not been grafted. By grafting we thus obtain the advantage of the hardy root system of Liberian whilst the produce from the grafted stems is the more highly esteemed Arabian coffee.

The famous Buitenzorg Botanic Gardens, near Batavia, where experiments are made with all kinds of tropical plants, furnished the first seeds of Liberian coffee to the planters of Java in 1878. Since that time the cultivation of this kind of coffee has so rapidly progressed that at present one-tenth of the State plantations are planted with shrubs of this sort, and one-fourth of the private plantations also.

OTHER VARIETIES OF COFFEE

Over and above the two chief kinds of coffee—Arabian and Liberian—which are described above, the following varieties deserve mention, on account of some peculiar characteristics. The Hybrico-coffee of Brazil, already mentioned, with its fruits containing four or six instead of two seeds. The Maragogipe, found in 1870 near the town of the same name of the Brazilian province of Bahia. The cultivation of this species has so increased that it certainly ranks third in the commercial world. In appearance the tree more resembles the Liberian variety, though the beans, excepting in size, are like the Arabian. The size of the berry is fully twice that of the latter, and in consequence realises a higher price. As the tree is of greater hardihood, and the price obtained for the berry in the various markets of the world is much greater than ordinary coffee grown on the same estate, it is not surprising to find that the seed has been taken to many other countries. In some, notably Guatemala, it has

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PICKING COFFEE

been very successfully grown and an increasing quantity has been sold from year to year on the London market. As the quantity increases it is doubtful if the difference in price will be able to be maintained, for, after all, the quality of the infusion is in no way superior and hitherto it has attracted attention more from a fancy for its size than from real merit. We shall have to speak of this later under the head of "Valuing." Its introduction into India was tried on several estates, but with little success. After some years the trees seem to have lost their fruiting power, and the crops have not been worth picking. The principal country where it has obtained favour is Germany, and it is said that it was used exclusively in the Imperial household. In this country it has been sold only in the smallest of quantities, being mostly used for show purposes, its high price and lack of any distinctive characteristic in flavour being detrimental to its popularisation here.

The Botucatu (var. *amarilla*), discovered in the year 1871 in the district of the same name in the province of San Paulo, which has been introduced into India under the name of "golden drop coffee," but of which the cultivation is not very important.

Experiments have been and are still continually being made with numerous varieties in the hope of finding a sort fit for cultivation. These experiments are conducted in various parts of the world with the wild Congo coffee (*Coffea robusta*), and in the Botanic Gardens of Ceylon, Trinidad, and elsewhere, with the Sierra Leone coffee (*Coffea stenophylla*), the beans of which are said to be superior in flavour to those of all other coffees. Another species of coffee (*Coffea excelsa*) has recently been introduced into the Trinidad Botanic Gardens, and is reported to be of considerable value.

CHAPTER III

CULTIVATION

As the methods of the cultivation of coffee and its preparation for market differ to some extent in various parts of the world, it will be best to give first a general account of the processes adopted, and to supplement this afterwards with notes on the industry in the different producing countries.

Coffee thrives to the best advantage in a hot, moist climate, and on rich, well-drained soil. A high rainfall is usually essential, and anything between 75 and 120 inches per annum is desirable, well distributed. It is true that coffee can be grown in dry regions and yield produce of excellent quality, but then the crop is usually very small. While its cultivation is confined to the tropics, coffee is pre-eminently a crop for fairly high elevations, and the best results are attained on estates situated above 2,000 feet, although it will grow almost down to sea level. Liberian coffee gives good results at lower elevations than Arabian.

In South America the coffee grown in very dry regions, situated rather high above the level of the sea, is considered the most fragrant; the fruits are much smaller, however, and the crop less plentiful. In damp regions, above a certain degree of latitude, the plant bears a very rich foliage, at the expense of the fruit. The two things most injurious to its growth are cold, and very hot, dry winds. If the plant is not protected it loses a large part of its foliage on the windy side; sometimes it is even entirely despoiled of its leaves. To prevent this, trees are planted round the coffee plantations to shelter them from the wind.

Propagation. Coffee plants are propagated from seeds, for which the largest and finest fruits from selected trees should be chosen. The seeds may be planted directly in the fields in the positions the future trees are to occupy. The method is commonly known as " planting at stake," because a stake is driven in to mark the position of the seeds, three or more being planted together so as to allow of the weaker plants being pulled up later. This method has several advantages, as it does away with the expense and risk of transplanting. On the other hand, if the climate is not sufficiently moist, there is always the possibility of drought injuring, or even killing, the young seedlings. If there is any likelihood of this happening the young plants must be raised in nurseries. When this course is advisable the seeds are sown in carefully prepared and thoroughly well-tilled nursery beds, situated so that the plants can readily be watered. It is necessary to afford shade to the young plants, and this can be done by arranging coarse matting, palm leaves, etc., on a framework three or four feet above the ground. When the plants are about one to two feet high they are transplanted to their permanent situations, this being done at a season when showers are frequent. Before transplanting the shade is gradually removed and the plants hardened off exactly as in this country one would prepare seedlings for the difference in climate between a frame, or greenhouse, and a situation in the open. After being transplanted temporary shading is afforded by palm leaves, leafy branches, or in other ways, each country and sometimes each estate having its own method in these matters of detail. The distance between the plants varies, but from ten to fifteen feet apart may be taken as about the

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CLEARING FOR A COFFEE PLANTATION

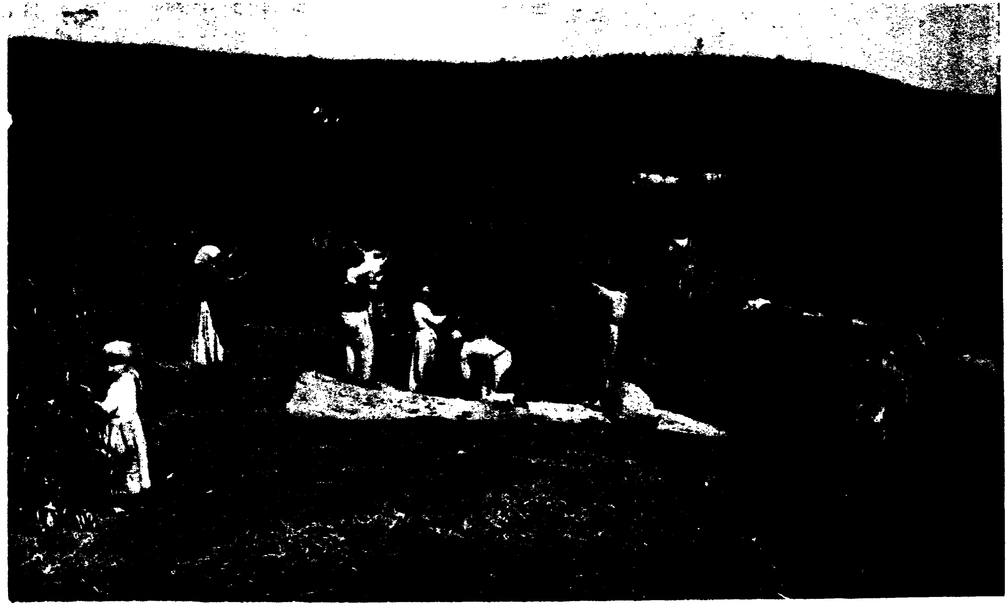
average planting distance. Catch crops can be cultivated between the rows whilst the coffee plants are young and small. In Brazil, for instance, maize and beans are planted between the young shrubs. These give a useful crop and at the same time serve to shelter the coffee from the sun. Bananas and plantains are commonly employed in a similar way. As soon as the coffee plants become well developed and begin to bear fruit, the other plants should be removed, unless there are special considerations which render their retention advisable for a longer period.

Weeding is of great importance in the coffee plantations and requires great care, for in regions of such luxurious growth grasses and weeds display an extraordinary vitality and vigour. In Brazil, with its dry climate, where the coffee shrubs are planted at sufficient distances from one another, mechanical weeding-knives drawn by negroes are used to clear the plantations, a method which is very little known in other countries.

Shade Trees. So far we have only spoken of the temporary shade provided for the coffee whilst it is young. Permanent shade trees are also often planted, amongst the favourites being species of *Erythrina* and other leguminous trees. The necessity for these is a disputed question. Certainly, excellent coffee can be grown without shade, for instance, the Blue Mountain coffee of Jamaica, and in Brazil also shade is not usually employed. The planters of other countries, such as Porto Rico, say that the plants absolutely require shade. Local conditions probably have much to do with this difference of opinion, and it is one of those problems which, as in the case of cacao, each planter must solve for himself as the result of his own observations. The whole question is fully discussed by Mr. O. F. Cook in an interesting Bulletin of the United States Department of Agriculture, entitled " Shade in Coffee Culture," in which the complex nature of the problem is well brought out. In all probability where shade trees are found to be advantageous their beneficial action is often only indirect, in affording protection from winds, drought, soil erosion, and in that increase of soil fertility which leguminous plants, as a group, bring about.

Fruiting. As a rule the coffee shrub first flowers in its third year, and then only bears a small crop of fruit. The fifth year is usually the time of the first considerable yield. Climate and soil have great influence on the blossoming. Where there are no great differences in the temperature in the different seasons the coffee plant bears flowers all the year through, so that at any time of the year an individual plant will bear flowers and fruit in various stages of development. The gathering of the crop and the treatment of the beans are in such places not restricted to definite seasons—a circumstance which is of no advantage, as the quantity gathered at one time is usually small, and the handling and preparation of the crop is more profitable when large crops are dealt with. It is thus preferable to form plantations in regions where the seasons are sharply distinguished from each other. In Java three gatherings are made annually, called the " early," the " chief," and the " after crop," but only the second, which begins at the commencement of the rainy season, is of great importance.

In the coffee-growing districts of Brazil differences in climate have great influence on the time of flowering, the time of harvest, and the quality of the product. Thus, ripening is hastened in the State of Rio de Janeiro, where it is much warmer than in San Paulo, the consequence of which is that the crop gathered in Rio is ready for sale at least a month earlier than Santos coffee from



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GATHERING COFFEE. EMPLOYMENT OF LINEN SHEETS
(LENÇOL METHOD)

San Paulo (April and May), whilst in other districts, such as Briganza and Atibaia, the crop is not ready until October.

The flower enjoys only a very ephemeral existence as the setting of the fruit generally takes place within twenty-four hours, and the petals wither and fall off almost immediately. A coffee estate in full flower is a very beautiful sight, but its glory is soon past, and an estate which was a mass of fragrant white blossom one day becomes green again within a comparatively short time. From the time of blossoming to the ripening of the fruits there is a period of some seven or more months.

Picking. It is easy to recognise when coffee fruits are ripe as they are then dark red, and bear a strong resemblance to ripe cherries. The cherries are readily stripped from the branches by hand, and are collected in bags, baskets, or other convenient receptacles. To obtain the best quality product only the ripe " cherries" are gathered, those which are green and unripe being left on for a later picking. Dry and shrivelled up berries must also be carefully kept apart. The picking requires to be done carefully so as to prevent the plant as well as the fruit from being damaged.

The Arabs allow the fruits to mature fully until they fall off of their own accord, or are made to fall by slightly shaking the plants, a cloth often being spread beneath. This ensures only quite ripe fruit being collected, and is no doubt one reason of the excellent qualities of Mocha coffee. This method, however, is not generally adopted in countries where there is a high rainfall.

In Brazil the crop is gathered " da terra " or " do lençal." If the first method is adopted the fruits are made to fall on the ground, which is first carefully cleared of weeds, and the cherries are afterwards gathered up and freed from sand, earth, etc., by sifting. In the alternative method the tree is shaken and the fruits collected on a cloth (lençal). Formerly this method was also practised at Santos, in Brazil, but since slavery was abolished in 1888 the gathering " da terra " (which is not so good, but requires fewer labourers) has gradually taken its place.

The fruits are usually carried in carts to the places where further treatment takes place, but on many large, up-to-date plantations they are transported along galvanised iron spouting by the agency of running water.

CHAPTER IV

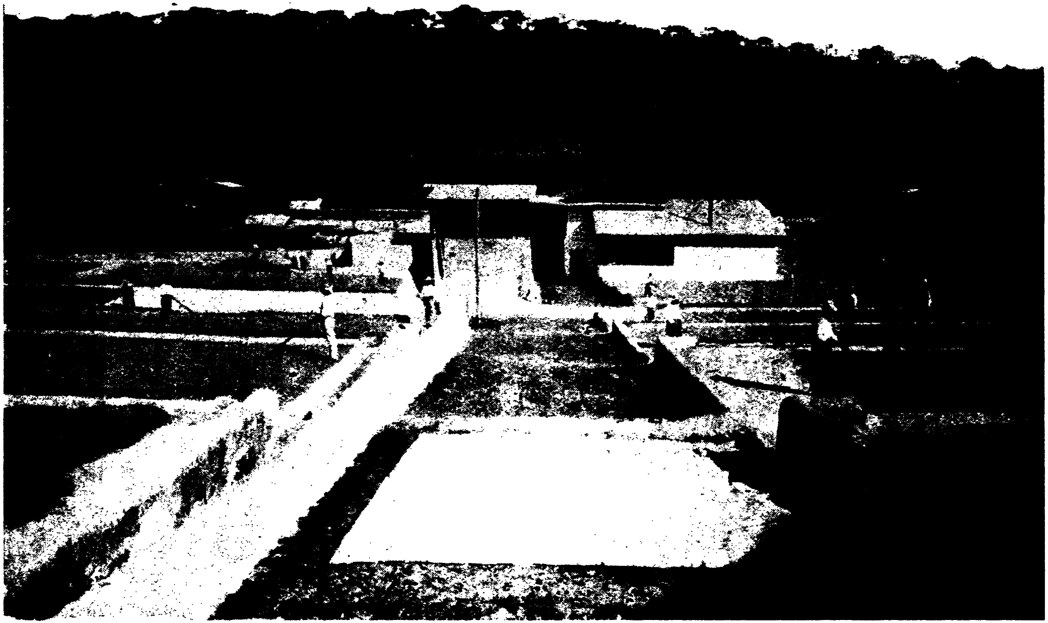
PREPARATION FOR MARKET

THE cherries as gathered each contain normally two seeds or coffee beans. Each bean is enveloped by the thin delicate silver skin, and outside this by the parchment, and both are enclosed in the fleshy pulp of the outer portion of the fruit. All these coverings have to be removed to prepare the beans for consumption. This may be done in one of two ways, (1) the older or dry method, still practised in Arabia and some other countries, and (2) the modern or wet method, often spoken of as the West Indian process.

THE DRY METHOD OF PREPARATION

The beans are spread out on stone drying grounds, commonly known as *barbecues*, in a layer a few inches deep. During the first day or two they are frequently stirred so that all are exposed to the sun, and afterwards means are usually adopted so that they can easily be removed under cover at night or at any other time when there is any chance of their being made damp again. The pulpy covering ferments and gradually dries, the whole processes taking two or three weeks. When thoroughly dry the beans can be stored any length of time until wanted, when all that has to be done is to remove the dried pulp in a primitive manner by pounding in a mortar similar to those used in the process of husking rice, or, as is now more usual, in a hulling machine. In either case the dried covering is broken up and the beans set free.

The dry method, although it is simpler and requires



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SPREADING WET COFFEE FOR DRYING

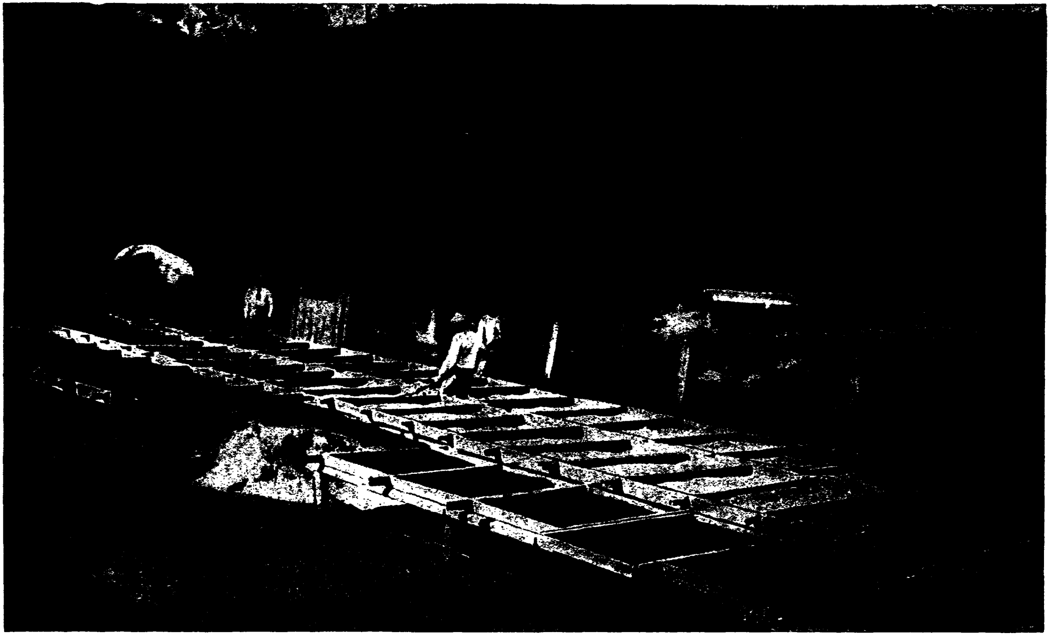
less expensive machinery, is gradually falling into disuse, and even in Brazil, where it is still prevalent, it is losing ground, because the modern wet method is quicker and is independent of the continuance of settled fine weather over a considerable period.

THE WET METHOD OF PREPARATION

In the " wet " method of preparation the cherries as brought in from the field are placed in a large tank full of water. The well-developed cherries are heavy and sink to the bottom, whence they are drawn off through pipes, whilst the immature and bad fruits (which are light) float on the surface, and are treated separately. The ripe cherries are carried directly to machines called pulpers.

Pulping. Pulpers are of various types, but one of the oldest, and yet most effective, consists essentially of a rough cylinder—more or less like a very large cylindrical nutmeg grater—which is made to revolve facing a curved metal plate. Between the two there is not room enough to allow the cherries to pass. The cherries are reduced to a pulp by the rasping action of the revolving cylinder. The mixture of seeds and pulp is carried away into a vat full of water, where it is mechanically stirred to cause the seeds to separate from the pulp. The heavy seeds settle to the bottom whilst the lighter pulp is carried away by an overflow of water. The seeds or beans are drawn off and carried in a stream of water to a kind of sieve, and the water is drained away.

Fermentation. The beans are not yet clean, but the " parchment " which is still uninjured is covered with a slimy layer which cannot be got rid of in the pulping machine. To remove it the beans are placed in a cistern or vat. Fermentation is set up and allowed to continue from twelve to forty-eight hours or more. When the



OPEN-AIR DRYING OF COFFEE IN NICARAGUA

fermentation has proceeded for a sufficient length of time the beans are removed to another vat and washed.

Washing. This is sometimes effected by running in enough water to cover the beans and trampling on them with bare feet when the adherent tissue becomes loosened. Successive rinsings with water, stirring with rakes or by special machinery result finally in leaving the parchment coverings quite clean.

During the washing process those beans which are not developed sufficiently and are light float on the surface and are collected separately to be sold as "tailings" of inferior quality. When the washing is completed the beans are strained again and removed to the drying place.

Drying. The way in which this operation is carried out depends largely on climatic considerations. With an assurance of continuous sunshine and a dry atmosphere it is sufficient to spread the beans out on a barbecue or drying floor usually made of stone, with a raised edge. By having sliding roofs to the barbecues, or by the provision of portable drying floors on rails, protection against rain and dew is easily secured. Other planters use trays, which can be placed on supports above the level of the ground and readily carried under cover when necessary. Drying coffee in such trays is illustrated in the picture shown at p. 30. When the sun's heat cannot be relied upon, artificial heat has to be resorted to. One method is to have special drying tables fitted with steam pipes. The beans are spread on these tables or trays, constantly stirred, and rapidly dried by the application of heat which can be regulated as desirable.

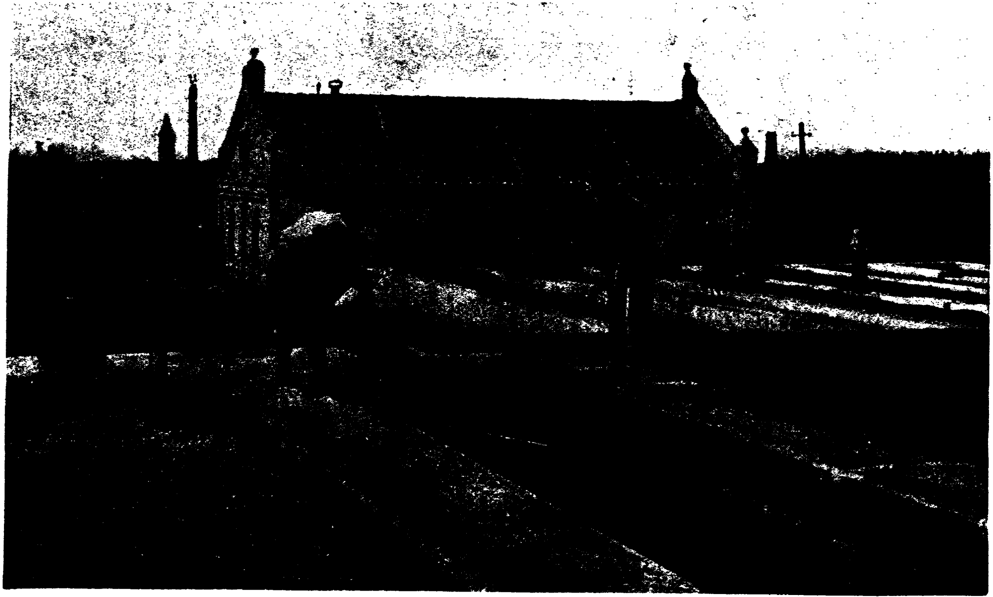
The colour of coffee, which has such great influence on the market price, chiefly depends on the quantity of water which the beans contain. Blue beans contain more moisture than the green, and these agai more than yellow ones, while slow drying in a damp atmosphere gives the beans the colour of lead.

The dried beans are now in the state known as " parchment coffee." Each bean is still covered by the delicate silver skin and that again by the parchment, which is harder and stronger in Liberian than in Arabian coffee. The produce is frequently exported in this state, and, for some time, at any rate, its quality appears to improve whilst it is kept in this condition.

Before, however, the beans can be used the parchment and silver skin must be removed, and this may be done on the estate, at the port of shipment, or at the receiving port or elsewhere, according to weather conditions, supply of labour, and other considerations.

Peeling. The removal of the final coverings is known as peeling. Machines of various types are employed, but in all the essential is to crack the parchment without injuring the bean. The coffee must be thoroughly dry before this is done, as then the parchment is brittle and more easily broken up, for example, by rollers. Winnowing removes the light pieces of parchment and leaves the heavy beans behind. A further simple rubbing and winnowing gets rid of the silver skin, leaving the beans clean and in the condition of ordinary unroasted coffee.

A very large proportion of the crops of several of the Central American states—notably Costa Rica and Guatemala—is treated here in the various bonded warehouses. Seeing that the shipping of coffee in this state, that is, with the parchment unremoved, must necessarily take up more room and therefore cost more for freight, it is rational to ask why this is done. In many coffee-growing countries the supply of labour is one that is most difficult to meet, and the planter is not only saved from this but from the expense of erecting machinery—which is afterwards expensive to keep in repair. Probably the principal reason, however, is that coffee freshly husked or " cleaned " is of a brighter and therefore better colour than that cleaned in the country of origin, and which has been thus transported to the various consuming markets. Colour, as we shall see later, being a dominating factor in the value, a higher price is mostly obtained for such London-cleaned parcels. The process of cleaning in this country is as follows: In the first place, each bag is separately tested to see that the parchment has been sufficiently dried, otherwise the husking cannot be done. The coffee is then shot into a hopper covered with a coarse grating to catch sticks or other refuse. It passes down into a long cylindrical machine internally fitted with blunted knives, which break off the parchment and eventually is pressed through an aperture almost closed in by a strong iron shutter, but sufficiently open to allow the coffee to come through. As it passes out of the cleaner, it has to fall through a second hopper fitted with a powerful fan which effectually blows the parchment skin away, leaving only the cleaned coffee to be dealt with in the sizing machines. Even after the sizing machines it is often found that the pea-berry is mixed with the ordinary flat berries, and an ingenious machine has been devised whereby the berries fall on to a slightly sloping and moving canvas, so arranged that the pea-berry shall roll downwards, but the slope is so gradual that the flats will cease rolling and be carried upwards and in this way are almost perfectly divided. After all this care in separating, the coffee having probably passed through three or even four sieves, it is sometimes found necessary to handpick it in order to remove the discoloured berries. This is



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PREPARATION OF COFFEE BY DAMP METHOD

PULPING SHED. OPEN TANKS FOR FERMENTATION AND WASHING done by boys or girls working with a foot treadle, which keeps a sheet of canvas revolving, on to which the coffee slowly falls and separates, so that all imperfections can be seen and readily removed. The dust and broken parchment, which amounts to from 18 to 20 per cent of the original shipment, is practically valueless.

Sizing. To secure uniformity in size, which is desirable when roasting, the beans are sorted into large, medium and small by passing them through sieves with meshes of certain sizes. The last stage is to pick them over carefully by hand to remove all foreign bodies, broken or discoloured beans, and anything in fact which would lower the value of the product.

The sizing of coffee is, however, by no means universal. For instance, Mocha is not so treated, nor many of those kinds, generally lower grades, which are prepared in what has been described as the dry method, on the estates where they are grown. Moreover, there is no actual standard for sizing. British-grown coffee carries the system out to the greatest extent, but even then there is no uniformity; that marked A or 1 on one estate being no larger than that marked B or 2 on another, in fact it would be wise to discontinue the lettering on the bags, though not to discontinue the sizing.

Transportation. Probably no article of commerce is conveyed to the port of shipment from the plantation in a greater variety of ways, owing to the fact that it is grown in such diverse countries and, from its necessitating a high altitude, often in inaccessible parts. In Central Africa human porters are employed; in Arabia camels; in Guatemala, in Costa Rica, and some other Central American states where railroads have not been built, ox-carts; while in other countries, where obtainable, mules or ponies are requisitioned. Owing to the magnificent inland water navigation which the rivers of Brazil and Colombia provide the transportation to the seaports is considerably easier than in less favoured countries. In all parts, however, the opening up of new railways is solving the transport difficulties and cheapening the cost of production. Further the opening up of new steamship routes, as well as the railways, is the means of accelerating the delivery at the principal consuming markets, so that the various new crops are obtainable some months earlier than used to be the case. In former days, when sailing vessels were chartered to bring a full cargo of coffee, beyond a portion possibly becoming sea-damaged, it mostly arrived in excellent condition; but with the present system of shipping in large steamers, with many other kinds of merchandise, it occasionally happens that the coffee becomes impregnated with objectionable scents and flavours, causing a deterioration of many shillings, and possibly pounds, per ton in value. At times this evil is so pronounced that a parcel, which from its appearance should command a very high price, can only be sold as the lowest grade.

After the beans come on the market they only require roasting and grinding to be ready for use.

CHAPTER V

THE PRINCIPAL COFFEE-PRODUCING COUNTRIES

Brazil

THE principal coffee-growing districts in Brazil are all included in the four states of San Paulo, Rio de Janeiro, Minas Geraes, and Espiritu Santo, lying just within the tropics, as shown in the map at the end. It is recorded that in 1920 there were in the state of San Paulo no fewer than 21,341 coffee estates, covering an area of 3,087,500 acres, the number of trees under cultivation totalling from 2,250,000,000 to 2,500,000,000. The coffee-producing region is but a very small portion of Brazil, which is nearly as large as all Europe, and much more coffee could be grown in the country if required. The consumption of the world, however, is steadily increasing, and the imports in 1930–31 reached a total of over 15,400,000 quintals. All the other coffee countries put together produce about 7,519,000 quintals, whilst for Brazil alone the crop for 1930-31 amounted to 7,881,000 quintals. The aim in Brazil now is rather to reduce the crop in order to maintain prices, and a tax has been imposed on new coffee estates. The present great production is largely due to the high prices which ruled from 1887 to about 1895, and encouraged planting enterprise.

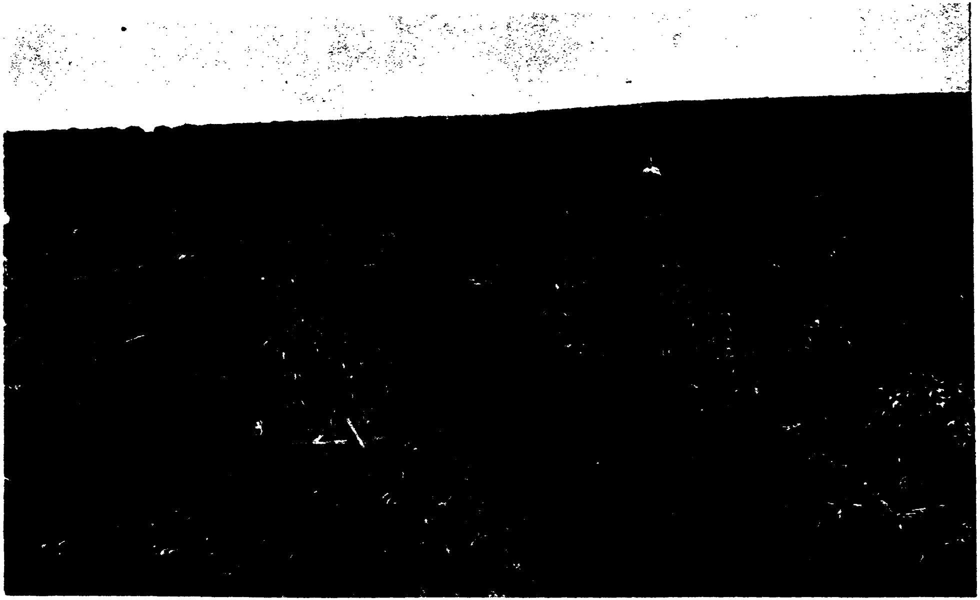
Of the four states mentioned above, that of San Paulo produces by far the largest quantity and certainly the finest quality. This is due not only to its area, but partly to its magnificent soil and to the intelligence and capital which has been employed by the planters, so that the " fazendas " of San Paulo (as the different plantations are called) are amongst the best equipped and most carefully worked of any coffee estates in any country. The illustrations given of the work carried on on these fazendas will show what care and money is expended on them, and though of late years, owing to over-production, the remuneration has not been adequate to the time and money invested, yet with a government which is far-seeing enough to foster the enterprise, there is little doubt that the planters will eventually be recompensed for all their labour. It is said that no less than 600,000,000 coffee trees were being cultivated in this state alone, when the government wisely passed a law that no further planting was to take place excepting under a very prohibitive tax.

The result so far, as will be seen by the bumper crop of 1906, has not been to reduce the output, and the explanation is that, seeing the coffee tree is in its perfection from its fifth to its fifteenth year, when it begins to deteriorate, it is evident that the large planting of 1895 to 1900 is still bearing fruit, and as planters have not been permitted to break up new ground they have been able to devote more attention to the old trees on their fazendas and by replacing any that showed signs of decay they have kept their plantations in a full state of productiveness.

The labour question has always been a difficult one, and it was said that a crop of more than ten million bags could not be picked; of late years the fallacy of this statement has been exposed over and over again and those who prophesied that the abolition of slavery would ruin the country have been most thoroughly deceived.

The abolition was, in the first place, decreed in 1871, when a law was passed that no children born of slaves after that date should remain in slavery. The northern states decreed the final abolition in 1885, the southern states followed in 1887, complete abolition dating from 1st January, 1888.

It may be asked, why should the government interest itself in what might be considered, and probably would be in many countries, merely a question of private enterprise. The answer is that the financial stability of the country is wrapped up in the coffee industry. It is true that many other most valuable and important products enter into the list of Brazilian exports, but the gigantic extent to which coffee production has been carried, the enormous, almost fabulous, amount of capital invested in its cultivation, the multitude of people employed in its preparation and handling, including the quantity of shipping employed in its transportation, invests it with great importance. One wants to be an eye-witness of the immense bustle occasioned by the coffee trade of Rio and Santos, must have observed the feverish excitement with which it is prepared, transported, bagged, unbagged, mixed, rebagged, loaded, marketed and shipped, before he can form any conception of the coffee industry in Brazil. Behind all this that goes on at the port of shipment there is the vast expenditure of labour for the picking and preparing for market, already described, which takes place on the plantations. So that the government are, certainly from their point of view if not from the point of view of the coffee trade in other parts of the world, acting wisely in taking steps as they have done only recently to check the continued depression of prices which must have eventually led to the ruin of many of the planters, the impoverishment of many of the fazendas, and possibly in time to the bankruptcy of the country, a result which would have brought untold misery to many,



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NEW COFFEE PLANTATION

not only in Brazil but in many other countries. Seeing what an important part Brazil occupies in the coffee trade, it may not be out of place to add a word as to its original introduction into the country. As has been the case in so many places and with so many products, the missionary was the first to introduce them. To speak more correctly, in this case it was the religious order which was already established there, for we find that in the year 1774 a Belgian monk named Molke procured some plants from Surinam in Dutch Guiana and planted them in the garden of the Capuchin Monastery of Adjuda, then situated in what is now the centre of the city of Rio de Janeiro. The plants prospered so well, and he became so convinced of their importance as a valuable acquisition to the industries of the country, that he established a plantation—fazenda it would now be called—in the vicinity for its more systematic cultivation. Joachim Bruner, the then Bishop of Rio de Janeiro, perceiving also the valuable benefits that would result from its more extensive cultivation, distributed seeds and plants raised on Molke's plantation among the religious institutions and planters of the country, recommending and encouraging its cultivation among them, but it was not until 1800 that Brazilian coffee became a general article of export and to be known in some of the commercial markets of the world. In that year a planter who had been expelled by the revolution from San Domingo, settled near Rio and introduced the latest improved methods of cultivation. Who could have foreseen that in about only 150 years from so simple and unostentatious a beginning would have grown up the enormous industry which, in these few lines, we have endeavoured to describe and the possibilities of which may be said to be illimitable?

Other South American Countries

In Venezuela and Columbia, situated in the northern and hottest portion of South America, coffee is extensively grown, chiefly in the mountain districts. From Venezuela the annual export is worth about £1,500,000, and mostly goes to France, the United States, and Germany.

Bolivia sometimes claims the honour of producing the best coffee in the world, that from the Yungas district being considered superior even to Mocha. Bolivian coffee is not important commercially, as the supply is not equal to the home demand. Is not this probably said of each producing country? We have heard it stated by the Africander and by the Queenslander, while the writer well remembers being asked to taste a sample sent from Peru, in the early days of its cultivation in that country, which was so described by the sender, but the verdict in London was that it was putrid and not fit for consumption. The question comes, and may be considered later, what is the standard of quality? It is doubtful—to say the least—if Mocha would receive the largest number of votes. Perhaps the explanation of this claim to produce the finest coffee may be found in that sentence, " The supply is not equal to the home demand."

Ecuador and Peru both export coffee, and steps have been taken to develop an industry in Paraguay.

The Republics of Central America

Guatemala

This is the most important coffee-growing country in this region, exporting coffee in 1926 to the value of from $23,538,512. About one-half the crop goes to Germany. Coffee is the principal industry, and is estimated to afford employment to about half the population at crop time. In the centre of the country is a mountainous region where some of the finest coffee of the world is produced. It is known to commerce as Vera Paz, the district in which it is grown. Unfortunately, the quantity produced on the best estates has become smaller year by year, and that in spite of the fact that the prices obtained are generally amongst the highest of the year. There is always a ready market in London for this growth and nearly all is consumed in the United Kingdom, being taken by dealers who have a specially high-class trade.

Costa Rica

Here again coffee is the most important industry, and of comparatively recent years it has shown a considerable increase. Now it is said that the whole of the country that is suitable for cultivation has been taken up, and the tendency is more likely to be to reduced crops rather than any further increases. Seeing that railways have so opened up the whole country, the cost of transportation, which was tedious and ruinous, is now much more reasonable, and considering the prices obtained, coffee cultivation must be a very lucrative industry. Rather more than half the crop generally comes to this country, where it is by far the most popular description. With the exception of a small quantity to Germany the remainder is shipped to the United States. Generally speaking, it is now a favourite kind on the continent of Europe. The total value of the crop exported during 1929 was returned at 48,912,267 colones.[1]

Nicaragua, San Salvador, Honduras

These states also produce a certain amount of coffee of varying qualities; the latter only in small quantities,

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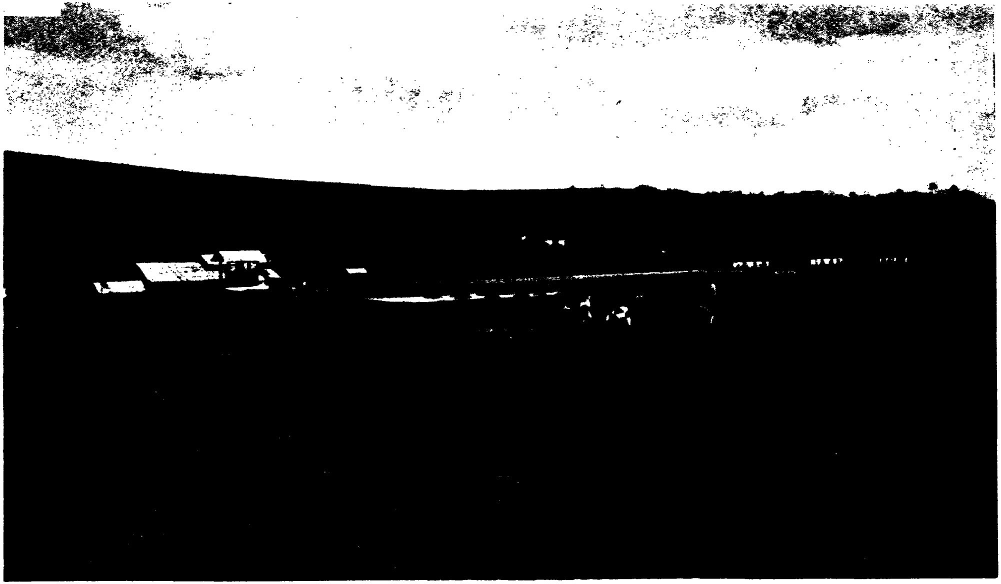
[1] Colone = £19·47.



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PREPARATION OF COFFEE BY DRY METHOD
DRYING GROUNDS OR "FERREIROS." DRYING BERRIES

as cocoa has received more attention. Considerable improvement has been made of recent years in the first of these countries. Plantations have been opened up in the Matagalpa district and a high grade has been produced realising most satisfactory prices to the planter. It has not, however, found favour in this country, and seems hardly likely to. As a whole the produce is of a quite inferior grade, but is much sought after in Northern Europe. The production in Salvador has probably reached its highest point, all the suitable land which is sufficiently accessible having been taken up. The produce is mostly taken by the United States or Germany, only a small portion being consumed in this country. The total export from Honduras for the year 1929–30 is returned at 18,086 quintals, and for the year 1931–32 figures are not yet available.

Colombia

Coffee cultivation has extended to a very considerable amount. Climate and soil are admirably suited, in fact, the conditions are so advantageous that it is said that three crops can be gathered annually. Certain it is that coffee arrives at almost all times of the year, though this is partly due to its having been kept up country for a lengthy period owing to the difficulties of transit. Though the rivers give access to large centres of cultivation it is often impossible to obtain vessels or it is unsafe to utilise them. The quality of the coffee grown has become increasingly popular in almost all parts of the world. It has a large demand in New York, and also in Holland, as it is found to mix well with Javas, and these are the countries most favouring that description. Canada also takes, in proportion to its total import, a large percentage of this growth, while it is much appreciated also in the United Kingdom. Recent years have, however, shown a most decided sign of deterioration in quality from some of the provinces, and there is a considerable difference in the out-turn from the different districts. Apparently less care has been taken in the preparation, but as this soon shows itself in the prices obtained, it should lead to more care being again given and a consequent return to the old satisfactory quality. One great drawback to this growth is due to the fact that there are greater complaints of loss of weight than with any other kind. There are probably two explanations, and both of them might be remedied if the importing merchants would take more care. The bags it is packed in are often insecure, and allow of much leakage, and what perhaps is still more the cause is that the coffee is not sufficiently dried, but arrives here in a soft, tender condition, which leads to evaporation and consequent loss of weight.

West Indies

The production in Jamaica is described on p. 59. In many of the islands coffee can be easily cultivated and is grown to some extent, if only for home consumption. Porto Rico formerly had a flourishing coffee industry, but its value has considerably diminished. Under the Government of the United States, experiments are being made to cultivate the type most in favour in the United States market, and to improve cultural methods. First-class Java coffees are being taken as the standard, and every effort is being made to obtain a product which can hold its own in competition with them.

For some years the production has fallen off at one time a small or a large crop made a considerable difference in the world's total, but now very little attention is paid to it. The total value of the crop during the year 1907 was returned at £897,798.

Hayti

Coffee cultivation has for a long period been an important item in the exports from this island, but little care has been taken in its cultivation, and consequently it is of inferior quality. The amount exported during the season 1930–31 was 260,000 quintals.

Mexico

From the West Indies it is certain that coffee was carried to Mexico and as early as 1818 it is recorded that there were plantations in the higher districts of the interior, and the venture proving very profitable other estates were rapidly opened, and great hopes were entertained that every available spot would be utilized for its cultivation and by its means capital and labour would be attracted to the country. To do this, however, a stable form of government is most important, and the civil disorders which began just about this period and continued for so long a time after paralysed the industry, and for many decades sufficient only was grown to supply the home demand. Now, however, a brighter era for this country has dawned, the area adapted for its cultivation is vast, the climatic conditions are all that could be desired, and the fact that excellent quality could be produced has attracted capital, so that it is not surprising to find that the number of plantations has increased of late years with rapid strides. Its nearness to the great consuming markets of the United States, and the simplicity of transportation by the many new lines of railroads, which of late years have been laid down, places the country in a most favourable position, and it is impossible to forecast how important a place it may eventually take in the world's production.

CHAPTER VI

ARABIA AND ABYSSINIA

THE name Mocha coffee is applied generally to the coffee produced in these countries. The best portion of the crop, it is said, goes to Turkey and Egypt, being purchased on the trees by traders who themselves look after the picking and preparation. The coffee which reaches Mocha for sale is that which is not considered worthy of purchase by those traders.

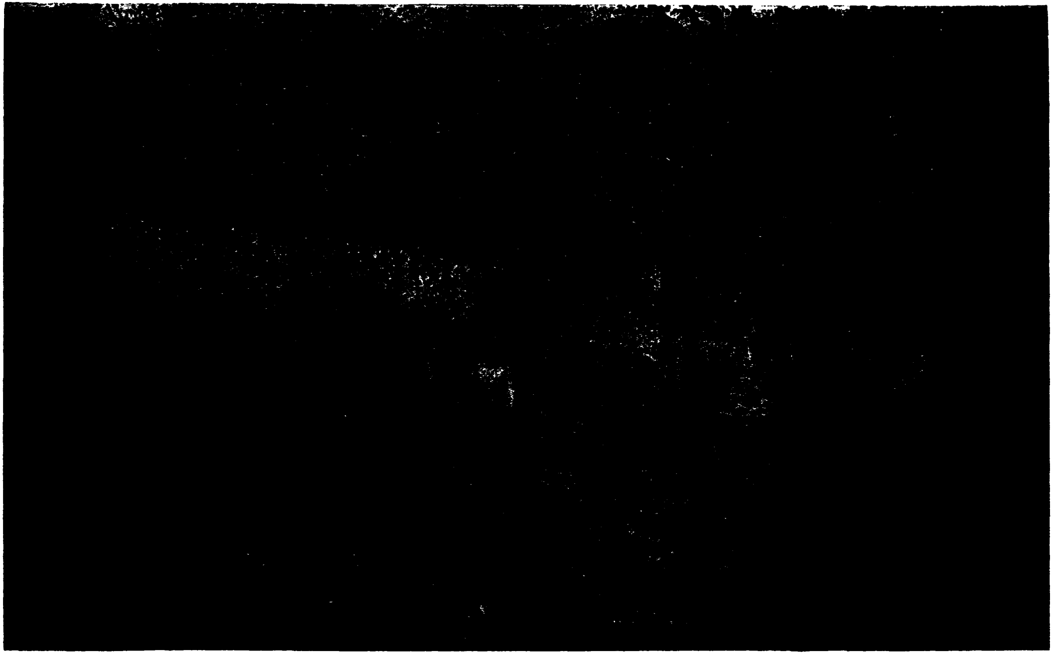
It is rather a curious fact that though no coffee is grown at Mocha any more than it is at either Santos or Rio, the names of these towns should have been given to the coffees that pass through these ports. The name Mocha is, however, applied to all the coffee grown in these countries. Such a designation is not given to any other descriptions but they are known by the names of the countries. By far the largest part of the coffee known as Mocha is certainly not entitled to the name, coming as it does from Abyssinia. As we have said in a former part, this is the original home of coffee and it is still grown in its native luxuriance and primitive abundance. In many parts it still grows wild, but it is also cultivated in almost all situations, plateaux and table lands, mountains, hills and valleys. The annual crop is a moderate one, how large is not generally known, for communications and transport facilities are so crude and difficult that it is hardly likely that the whole of it reaches the outer world. The country is particularly fertile and most suited for its cultivation, so that when it becomes more opened up to commerce and the unchanging East has learnt its lessons from the

West, it is probable that with more scientific methods of production it may become more generally used and take a more important part in the trade of the world. Though Abyssinia may lay claim to being the country where coffee was first discovered, yet Arabia has a strong claim also. The explanation probably is that the seed, or plants, were taken to Arabia at a very early stage. Certain it is that Arabian seeds and plants were utilized in transferring the plant, both to the old and new world, for there is distinct evidence that the original trees in Java, as well as in the West India Islands, were first brought from Arabia, while the very term " Coffea Arabica," by which it is known botanically, would certainly imply that this was its original habitat. Further, it is in evidence that from Arabia the civilized world first learnt the art of preparing it in a liquid form, while in Abyssinia when first used it was eaten, or, as it was, and still is, called, " taken " in the " solid form." To this day many tribes of Arabs in this and the neighbouring countries carry with them portions of roasted coffee, ground and pressed into cakes which they eat with their dates. The finest coffee of Arabia is grown in the Yemen province, a highland country formed by a labyrinth of fertile valleys and precipitous hills. While so much of the country is an arid waste, this province is well supplied with water and without it coffee cultivation would be impossible. The best, as in all other countries, is grown on the hill slopes, and as these are very precipitous and difficult of access the area of cultivation is cut up into what must be called gardens rather than plantations. The trees yield their fruit twice in the year and indeed a third crop is by no means uncommon, though the quality of this latter is much inferior. As one would naturally expect from such a people as inhabit this country, the cultivation and preparation is of the simplest and most primitive kind. When ripe the fruit is simply shaken from the trees and it has been alleged that this system, involving, as it does, the necessity of the fruit being actually ripe, is a primary cause of the excellence of this growth. The husking or cleaning is done in the most primitive manner, being simply pounded in a species of mortar until the husk can be easily removed; when this, as well as the inner parchment, has been thoroughly taken away the beans are most carefully and even laboriously picked, with the object of grading them into the various qualities, the finest lemon coloured, transparent beans being reserved for consumption in the country, or by the court of the Sultan of Turkey, the King of Egypt, or the Shah of Persia, in other words, by the principal rulers of the Mohammedan world. As we might expect from this old-world, Eastern country, where customs are said never to change, the packages used are different to those in any other part of the world, being made of strong-matted straw, lined with cloth and known generally as Frazils. The only figures obtainable as to the crops give the total as varying from 115,000 bags to 175,000 bags.

DUTCH EAST INDIES

The produce from Java, Sumatra, Celebes, and Borneo is known generally as "Java coffee," and the greater part comes from Java. The plantations are largely owned by the Government, and great care is taken in the cultivation and preparation.

Though for many years now there has been more coffee grown in private plantations than by the Dutch East India Company, which is a Government monopoly, at one time the reverse was the case, and an enormous revenue was obtained from its cultivation. Under that



JAVA. COFFEE IN FULL FLOWER

system every family was compelled to cultivate, pick, dry, husk and deliver to certain specified ports and in return received a small payment, but the work was in general looked upon in place of the ordinary taxation. The system seems to have worked well and without causing any serious trouble, but, as has been said, only a comparatively small part is now grown by the Government.[1] Years ago all the available mountain slopes were literally covered with coffee, but the introduction of the fateful leaf disease has ruined many estates, while the prices to which all coffees have fallen have further impoverished the planter, and in consequence the manuring of the trees, which is essential for their productiveness, has not always been continued. Hence though trees on the uplands will last in full bearing for twenty years they seldom attain that age, and though the introduction of the Liberian tree was hoped to save the situation, yet many plantations have now been cleared and the rubber industry, even more than tea-planting which was first tried, is proving so remunerative that there seems little chance of coffee cultivation ever again becoming as important as it was in years gone by. In 1922 the total crop of the various islands was 40,557 metric tons, and in 1930, 30,673 metric tons. Old Government Java, for which there is still a large demand and which realises some of the highest prices of any coffee, is obtained by storing the products from the finest estates in warehouses for from five to ten years before allowing it to be marketed. The warehouses are specially constructed to admit of both sun and air, so that the beans may become thoroughly mellow and the volatile oil which gives coffee its distinctive aroma is by this means completely developed. The beans by this process become of a rich brown colour though often

[1] Number of estates in Java: 1930, 301.

much eaten by various insects of the weevil order. The coffee is said to lose as much as 15 per cent in weight in three years, but this loss is compensated for by the higher price obtained and to the dealer by the fact that being so dry the further loss in roasting is proportionately less. Much of the Liberian, which is sold as Java Liberian, is grown in the smaller islands of Malaysia and in the Straits Settlements generally, but this has not proved the success which it was at one time expected to be.

CHAPTER VII

COFFEE PRODUCTION IN THE BRITISH EMPIRE

THE chief coffee-producing countries in the Empire are India, Jamaica, British East Africa, and Ceylon. Small quantities of the product are grown also in Queensland, British Honduras, and Natal, whilst in almost every part of the tropical regions of the Empire one or other species of coffee is cultivated for local use.

INDIA

As might be anticipated from the fact that this country is the chief source of " British-grown " coffee consumed in the United Kingdom, and of some twenty per cent of our total supply, India is the principal seat of coffee production in the British Empire. The most recent returns estimate the area under coffee cultivation in India as close upon 160,852 acres, almost all in Southern India, and about one-half in Mysore. Unfortunately, the general tendency appears to be to decrease the area under coffee in the country.[1] When coffee was first cultivated the land was obtainable at a comparatively trifling cost, and the crop was one of the most profitable that could be grown. After a time many of the estates changed hands at a considerably enhanced price and then troubles seem to have come in rapid succession. In most districts coffee is an expensive crop to cultivate, the trees need regular manuring, and much labour has to be expended in clearing the ground of weeds, and with the heavy fall in value which has taken place the crop is said to be no longer profitable. The plantations have also suffered considerably of late years from the dreaded leaf disease which it appears almost, if not quite, impossible to overcome. It was hoped, by some, that the introduction of the Maragogipe species would be beneficial, but it has not proved a success, and no further planting has taken place for some years. In Southern India, Travancore in particular, very few coffee estates are left, it having been found much more profitable to cultivate tea. This is being done increasingly in other parts, and it is thought by many that tea will eventually completely drive out coffee, though in the Neilgherry and Mysore districts it will probably remain the longest. Its introduction into India dates back many centuries, having been brought by the natives who had direct commercial relations between the Malabar coast and Arabia. Tradition says that a certain convert to Islam, by name Baba Booden, went on pilgrimage to Mecca, and brought back with him seven berries which he planted on the hill range of Mysore, a range which now bears his name and on which most of the finest estates are still situated. The first estate owned here by an Englishman, was opened in 1840, and since that date coffee has been regularly cultivated there. The total Indian crop is however steadily decreasing, fluctuating, of course, according to the seasons, but it has fallen from as much as 450,000 bags to as low as 50,000 bags to be exported, an average crop being about 100,000 bags. Practically the whole is shipped to the United Kingdom and to France.

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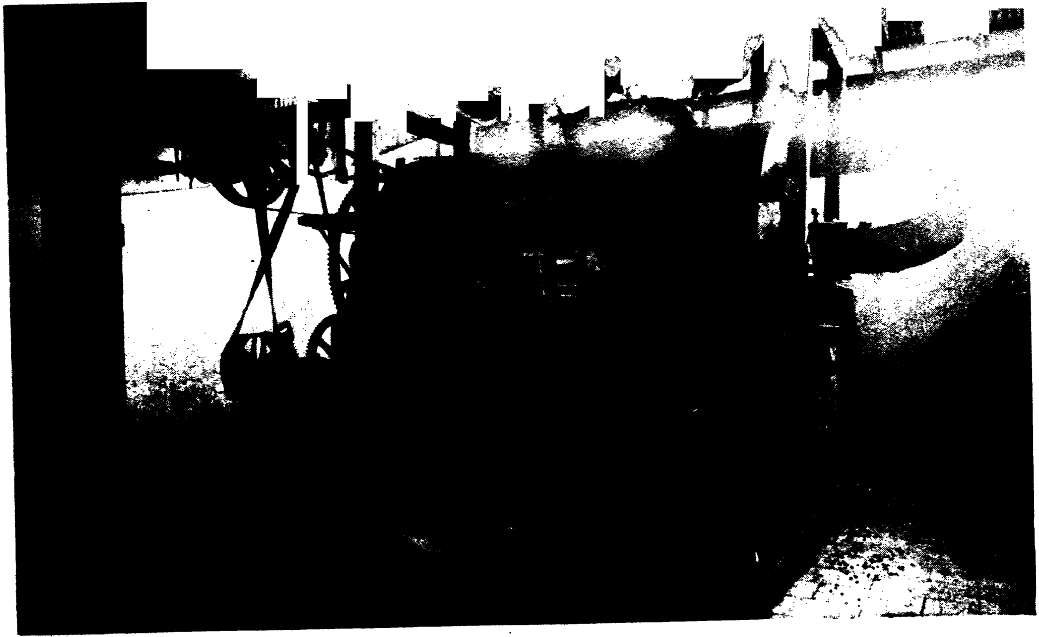
[1] Exports in 1931–32 were 155,600 cwt.

CEYLON

In a work published some years ago on the products of this most beautiful tropical island, it is said that when in 1836 the duty on coffee in England was reduced to sixpence per pound, a great impulse was given to coffee planting. If such was the case, and it certainly was, then how great ought the production to be to-day when the duty is only three halfpence. Yet though only a quarter of a century ago coffee was the principal product of the colony, and the value of the annual crop exported exceeded £3,000,000, in 1930–31 the total grown amounted to only 112 cwt.

From very early times it is recorded that coffee grew wild in many parts of the island, but during the decade commencing with 1836 there was what can be only described as a rush for lands said to be only paralleled by the movement towards the gold mines in California and Australia. The mania so acted upon all classes that we are told even the governor, council, military, judges, civil servants, and clergy all swarmed to the hills to purchase the Crown lands which the authorities were only too ready to sell, and did so to the extent of about 40,000 acres per annum. Officers of the East India Company sent their savings to invest in what was to be an El Dorado. Then the crash came, hastened by two causes: first, the financial panic through which England passed in 1845, and, secondly, the withdrawal of the protective duty—for this happened in the days of protection to which we are asked once more to return —a duty being charged on the product of Java, Brazil, and other coffee-growing countries in excess of that levied upon the British-grown product. Still the crisis had some compensations, for it led to a healthier condition of planting. Economics were introduced into the management of the estates, and scientific principles were established instead of the many different schemes which individual planters without any real knowledge endeavoured to carry out. While there are still a few left in the trade who can remember when "Plantation" and "Native" Ceylon were the two principal kinds used by the grocers throughout the kingdom ; to-day Ceylon coffee is hardly known as an article of commerce and certainly the greater number of grocers have never sold a pound of this once favourite description. The term native has always been, as applied to Ceylon, somewhat of a misnomer, for though coffee is reported to have grown wild there, it is more than likely that it had been brought by Arabian traders. In later years, the term was applied to that grown on more hardy trees, which were planted around a garden or plantation, and did not receive the same care and attention as the product of these plantations did, while the crops grown on them were looked upon and treated as part of the wages of the natives, or coolies, who were employed on the estate. The final blow to coffee culture in Ceylon came with the development of the leaf disease, which is here described, and though for a time Liberian coffee was introduced which it was hoped would resist the ravages of this pest, even that has had to give way to the more profitable tea and rubber, for both of which the island has become noted. Whether the high prices obtained, for the small quantity grown, will induce further cultivation is open to question, for though the quality of the product stands quite alone, and will always ensure a ready sale, yet with an increased production there would naturally be a corresponding reduction in price.

Coffee Leaf Disease. The Ceylon coffee industry was ruined owing to the attacks of a minute fungus, known as *Hemileia vastatrix*, very similar to the rust of wheat. The disease was first noticed in 1869, when it was already fairly well distributed throughout the island and had probably been in existence for some time. The characteristic outward sign of the disease is the formation of a number of yellow spots on the surface of the leaves. Owing to the fungus using up the plant's food, the coffee



By permission of H. Luscombe Toms

COFFEE DRIER EMPTIED

plant is weakened, its leaves fall long before they would if not attacked, only a small proportion of the flowers develop sound fruits, and accordingly a very poor crop is the result, whilst the whole plant is weakened and may finally be killed. The disease was very carefully investigated by the late Professor H. Marshall Ward in 1880-81, but no curative measures could be discovered. The greatest assistance was rendered by the Botanic Garden, and the Ceylon planters displayed wonderful energy in meeting the disaster. Within a year or so after the disease was noticed in Ceylon it appeared in Southern India, and rapidly spread to other countries also, the spores probably having been introduced in various ways; practically all the coffee-growing regions of the Old World were affected. The disease is so dreaded that other countries took, and still take, every possible precaution to guard against its introduction.

JAMAICA

The " Blue Mountain " coffee of Jamaica is famous and commands higher prices than any other kind of coffee. It is grown at elevations between 3,000 and 4,500 feet on estates situated in the beautiful mountain range whence it derives its name—in a region where the climate is cool, and rain, alternating with bright sunshine, is obtainable all the year round. The output of the better grades is limited to rather less than 8,000 cwt. per annum. The total export of coffee varies, however, between 50,000 cwt. and 100,000 cwt., and it usually stands about third or fourth in order of value amongst the products of the colony.

Taken as a whole, coffee culture in the island has degenerated very seriously. Since the commercial depression which fell upon it, according to many, with the abolition of slavery, there has not been the care and attention given to its production that was given formerly. The result is seen in depreciation of quality, and with a corresponding lowering of prices it is quite conceivable that it is no longer the paying article which it was in early days. A large proportion of the total production of the island is grown by the natives in small patches, and they have neither the materials nor the inclination to improve the quality, leaving the trees to become worn out and unproductive. There is, however, now some indication of a more systematic cultivation, and rather large quantities are being exported, much of it being shipped here in the parchment, with the result that more care is devoted to the cleaning, and better results are obtained.

BRITISH EAST AND CENTRAL AFRICA

Coffee was the principal export of British Central Africa, and the Protectorate stood alone in the British Empire in this respect. The introduction of coffee into the country is quite a recent event, comparatively speaking, having taken place in 1878.

The area under coffee reached its maximum in 1900, when it was 16,917 acres in Nyasaland alone; it decreased more or less steadily, until in 1907 it was 6,134 acres. The diminution in coffee cultivation has been due to the general depression in the coffee market and locally to droughts to a considerable extent. The great fall since 1904 appears to be due to the increased attention given to cotton. Interest is reviving, and in 1931 1,542 acres were under cultivation in Nyasaland alone. The coffee estates are chiefly situated in the healthy Shiré Highlands, and Arabian coffee is almost entirely grown.

The figures of the weight and value of the exports indicate a decided falling off during the last ten years. In 1898 the weight exported was 7,688 cwt. valued at £22,412, while in 1908 it had fallen to 7,120 cwt. and £16,374 value. The total value of all exports in 1898 was only £26,146—almost all coffee—but in 1908 it was £214,631, showing how cotton cultivation has largely been introduced rather than fresh plantations of coffee. Part of the reduced export is, however, due to the fact that as the interior of Africa has been opened up by a largely increasing white population, so the demand from the country itself has increased, and in addition to the amount exported must be added the amount retained for consumption there, but these figures are not obtainable. The acreage under cultivation, however, as shown above, has greatly decreased, but it is probable that as other parts of Africa are opened up and European capital is attracted there—for instance in the outlying parts of the Uganda protectorate and in some parts of the Congo Free State as well as possibly in Northern Rhodesia—coffee will be introduced and British grown coffee may become a considerable item in our food supplies.

KENYA COLONY

Production in Kenya amounts to (1931) 245,903 cwt., valued at £986,429. Total acreage under coffee in Kenya (1932), 98,874. Total acreage under coffee in Uganda (1931), 39,214. Exports (1931), 69,990 cwt., valued at £161,389.

NETHERLAND EAST INDIA COFFEE

The total production of Netherland East Indian coffee from January to September, 1932, was 1,179,000 piculs, and for the same period during 1931 696,404 piculs.

1 picul equals 61.76 kilogrammes.

Although the production of fancy varieties is decreasing, this is made up by the increased production of Robusta in Sumatra, where many new estates are coming into bearing. The ravages of the coffee berry bug are not so serious as in Java, and on many new estates this insect pest is at present unknown.

KENYA COFFEE

Kenya coffee, first introduced under the description Nairobi, is rapidly gaining in popularity all over the world. It is largely taking the place of Mysore and other East Indian kinds for blending purposes, and in that capacity gives the maximum amount of satisfaction. The quality of East India coffee continues to deteriorate yearly, the reverse being the case with the coffees of Kenya, where substantial progress continues to be made. On 29th February, 1932, 98,874 acres were planted under coffee. Returns of coffee plantations have been made by 940 planters, indicating that 40 per cent of the total number of European occupiers are coffee growers. The total production of coffee for the period 1931–32 was 180,915 cwt., against 277,725 cwt. in 1930–31.

The following table shows the acreage planted in each of the four years during which a census was taken, also the areas at different stages of production and the increase in each year.

Year.	Total Acreage.	Non-productive Area (up to 3 years).	Semi-productive Area (3 to 6 years).	Fully productive Area (over 6 years).
	Acres.	Acres.	Acres.	Acres.
1932	98,874	20,199	23,692	54,983

COLOMBIAN COFFEE

Colombia likewise is now receiving better attention from planters, and it is very probable that in the near future it will have developed into one of the largest coffee-producing countries in the world ; and, provided it is given the necessary attention, the quality should make consistent improvement.

EXPORTS OF COFFEE FROM COLOMBIAN PORTS FOR 1930

	Metric Tons
Barranquilla (Puerto Colombia)	70,397
Buenaventura	70,790
Cartagena	36,560
Cucuta via Maracaibo	12,068
Santa Marta	519
Others	47
	190,381

From the foregoing it will be seen that Colombia and Kenya are the countries most likely to provide the world with larger supplies. This is a very important factor, regard being had to the increased consumption of " mild " coffees, largely due to the fact that approximately half the Costa Rica crop and a fair proportion of practically all other descriptions are shipped to the United States, whereas, before the war, that was a quarter which confined its attention almost entirely to Brazilian and Colombian descriptions.

CHAPTER VIII

TECHNICAL TERMS

HAVING thus far dealt with the different kinds of coffee as to their history and present cultivation, we may perhaps do well to describe more fully sundry technical words which are in common use in the trade, and which have not always an obvious meaning.

Cherry Coffee. This does not refer to the coffee as picked off the trees, that is known as coffee in the cherry, but to the berries which have been sun-dried before pulping. This is more often done in the East than in other countries; they are left exposed to the sun's rays for many weeks. As a rule, these are only the final pickings and the product is of quite a low grade. They are almost invariably bad roasting coffees, and therefore unsuited for consumption in this country. They are mostly sold direct, or re-exported to France or Southern Europe, where they are frequently mixed with Mocha, to which growth in appearance they mostly assimilate.

Triage. In the cleaning, as previously described, there must of necessity be many berries that become broken. Also it is found, just as it is with all fruit trees in this and other countries, that many berries become deformed or irregular in shape, possibly from rubbing and pressing one against another, or by abnormal growth, such extra large berries being again separated and known as Elephant Triage. All these are picked out from a good quality coffee, in order to make a regular and handsome parcel. These are the berries that form the Triage, and when they have been carefully selected and any blighted or black berries excluded, they meet with a ready sale, being useful to sell as ground coffee.

Washed. This term is not applied, as is the case with sugar, to that which has been in any way damaged, but it refers to the process of cleaning immediately after picking. Its tendency is to preserve the colour, though after a time this is lost and the coffees become quite pale, and, if soft coffees, almost white.

Peaberry. This term almost explains itself, though it may be well to state that it is due to the fact that one of the berries has proved abortive, and hence when the cherry is picked and opened, it is found to contain only one instead of two beans. The one consequently receives all the nourishment which should have gone into the two beans.

Quakers. This is a term used only for roasted coffee. It refers to those berries which, without being absolutely "pale," yet will not, by any amount of roasting, become of the requisite brown hue which is desired. When cracked they have an unpleasant odour, and one berry in a cup is sufficient to materially reduce the value.

Unclean. As a rule, this term has only reference to the taste of a parcel, and without being able to describe it in detail (is it possible to describe a flavour ?) it is such about which there can be no mistake. At times it can be detected in the raw state, berries that are of a certain brown glazed hue, when cut with a penknife, and found to be absolutely putrid in smell, are the unclean ones, and one such berry in a full dock sample would be sufficient to make a careful buyer reject the parcel. There have been many theories as to the cause of these berries, and perhaps the most likely is that fermentation has not been stopped at the right stage, and in consequence they have become spoilt and unclean.

CHAPTER IX

PRODUCTION AND CONSUMPTION

UNDER the headings of the different countries where coffee is grown a general idea of the production has been given, but it will be well to tabulate out the total of last year's crops to give some idea of the vastness of the coffee trade of the world, and by inference the enormous amount of capital engaged in it. As with every article which depends largely upon climatic changes, there must be a considerable difference between the harvests of different years, but grown as it is in both hemispheres and in so many different countries, it is hardly to be expected that failure—or even partial failure—will be found in all countries in the same year. Neither is it to be expected that there will be abundance in all places at the same time, and though it is certain that in the latter case, with the low prices which would result, the consumption would certainly increase, yet in the former case the high prices would certainly lead to a diminution of consumption in a more marked degree. That this is so has been proved in comparatively recent times, as in 1884-6, when the consumption had overtaken production, and some years of high prices following, the ratio was completely changed, the reduction being brought about by two causes. First, it was found that adulteration was carried on on a much larger scale, and, secondly, whenever the retail price of coffee rises above a certain point, other drinks, notably tea and cocoa, take its place.

The following table shows the exports during recent years, and to obtain the total production the amount retained for home consumption will have to be added, but these figures are not published.

Exports from the Following Countries

1929.	Brazil	9,173,045	quintals
	Venezuela and Colombia	643,686	,,
	Hayti	170,507	,,
	Guatemala	428,654	,,
	Salvador	467,826	,,
	Java	282,909	,,
	Mexico	298,759	,,
	Porta Rica	5,800	,,
	India	52,406	,,
	Costa Rica	196,761	,,
	Nicaragua	132,481	,,
	Total world's exports	14,747,000	,,

Turning to consumption, it is difficult to give a full, comprehensive table, for the use of coffee has extended at an enormous rate of late years, until at the present time it is found in every civilized country, and in many which would be classified as uncivilized. There is, however, still a vast field to open up, for were the teeming millions of China and Japan to develop a liking for this most enticing beverage, and a change of habit from the enormous consumption of tea to come over our own country, it would mean the opening up of still untouched areas, and a production to correspond thereto which it is impossible now to conceive of.

Coffee Consumption in 1930

Germany	1,539,922	quintals
France	1,786,994	,,
Austria and Hungary	89,979	,,

Great Britain	160,212	quintals
Belgium	470,215	,,
Switzerland	136,553	,,
United States	7,135,252	,,
Canada	137,157	,,
South Africa	131,105	,,
Argentine	254,392	,,
Australia	15,367	,,
Holland	362,090	,,
Sweden	446,863	,,
Norway	170,307	,,
Denmark	273,552	,,
Italy	452,897	,,
Spain	264,558	,,
Portugal	47,992	,,
Turkey	55,200	,,
Greece	58,378	,,
Romania	42,166	,,
Serbia	91,414	,,
Egypt and N. Coast of Africa	223,873	,,
Czechoslovakia	136,658	,,

With such figures we are compelled to ask why is the consumption in this country so out of proportion to that in others. There are some who would say it is a question of climate. Yet we do not find the greatest consumption either in the cold or in the hot countries. Further, in the great area of the continent of North America there are vast areas where the climate is not so greatly different from this country, and yet the consumption there is not confined to any one part, but is spread over the whole of the United States. Others will say it is due to our duties making the retail cost too high. Yet this cannot be the true cause, as duties in both France and Germany are higher—especially since the recent

By permission of the Commissariat Général, San Paulo

COFFEE WAREHOUSE AT SANTOS

rearrangement of the German tariff—and the price of the article in both countries is much dearer than here. Again it cannot be caused by inferiority of quality, for in no country in the world is finer coffee consumed. The London market quotations will show that this is the case. Apart from two other suggestions, which will be dealt with later, it is possibly due either to the cheap price of tea, cheap because it will " go " so much " farther," it being possible to " water the pot " many times, whereas with coffee it is not ; or, in the fact that it is a little more trouble to make than tea, and in these days of hurry and bustle time is most important. At the same time, against this last suggestion one would think that " hurry and bustle " were a more marked feature in the United States of America than in this country. The other suggestions, which will be referred to under their respective headings, are the question of roasting and of adulteration. We are, however, here discussing the production and consumption in the world rather than in this country only. It will be found that price enters very largely into this question as the following facts clearly prove. Up to 1860 there was a wide disparity between the production and consumption of coffee throughout the civilised world, the former remaining stationary while the latter continued to increase rapidly until the American Civil War, which caused a reduction in that country of nearly 200,000 tons per annum, thus re-establishing the relative difference between the laws of supply and demand. With the close of the rebellion, however, and a reduction of the duty, the consumption again steadily increased, exceeding in a short time the increase in the production, causing a steady advance in prices from 1869 to 1880, the extreme advance in prices in the latter year naturally stimulated and increased production until stocks accumulated largely, and prices again declined accordingly. During the period from 1880 to 1887, planters and dealers suffered greatly, many disastrous failures among both classes following as a consequence. The consumption meanwhile continued to increase steadily, as did also the production, owing to the yield of new plantations previously opened under the stimulus of the high prices prevailing in 1880, fair relations between the production and consumption being maintained for many years.

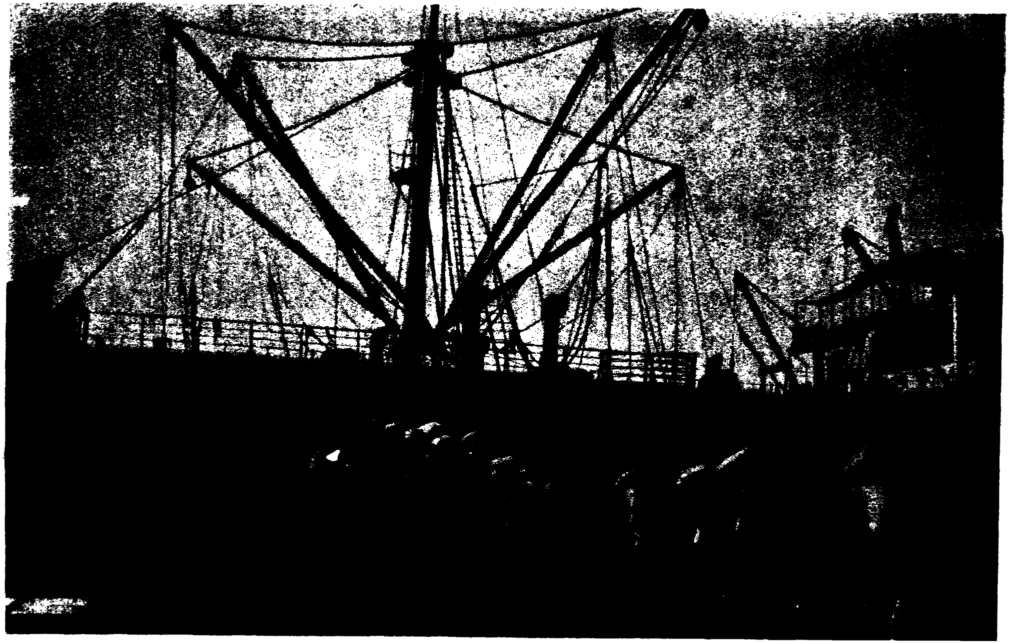
The following statement shows what has been the *per capita* consumption of coffee during the years 1924–29 in the principal countries of Europe, the United States, Australia, and Canada.

PER CAPITA CONSUMPTION OF COFFEE 1924–1929

(IN KILOGRAMMES)

	1924	1925	1926	1927	1928	1929
Sweden	7·2	6·1	6·9	7·1	7·1	6·7
Norway	5·8	5·6	5·8	5·9	5·8	5·8
Denmark	7·0	6·8	6·4	7·0	7·0	7·0
Great Britain and North Ireland ..	0·3	0·4	0·3	0·4	0·4	0·3
Holland	4·8	4·0	4·2	4·8	4·7	4·5
Germany	0·9	1·4	1·7	1·9	2·4	2·2
France	4·3	4·2	3·8	3·9	4·0	4·1
Belgium	5·3	4·9	2·6	5·2	4·2	4·8
Italy	1·3	1·1	1·1	1·1	1·2	1·1
United States ..	5·6	5·0	5·5	5·4	5·4	5·5

In considering the above figures, it must be remembered that coffee is free of duty in Holland and the United States, a fact which explains the apparently wide fluctuations in consumption in those countries, imports nominally entered for consumption being often



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SHIPMENT OF COFFEE AT SANTOS

in these cases imports for stock and re-exportation, whereas when coffee is dutiable the imports for consumption more closely agree with the actual consumption by the population, and consequently fluctuate much less from year to year.

The duties levied in the various countries are as follows—

Great Britain : Preferential, ½d. a lb.
,, Ordinary 1½d. a lb.
Germany : 160 gold marks for 100 kilos.
Austria : 320 gold kronen ,, ,,
Hungary : 200 ,, ,, ,, ,,
France : Minimum, 231·20 fcs. ,, ,,
,, General, 510 fcs. ,, ,,
Holland : Free.
Belgium : 115 fcs. ,, ,,
U.S.A. : Free

CHAPTER X

PREPARATION FOR THE LONDON MARKET

LONDON is unfortunately no longer the principal port in Europe to which coffee is shipped. Many other places attract much larger quantities, as is shown by the following table of European stocks on November 1st, 1932. That this should be the case is natural now that steamship routes are open to and from all ports, and banking facilities on the Continent, so much greater than they were a generation ago. Further it is natural that coffee should be imported direct into the chief ports of those countries which consume the larger quantity, and therefore not only would it be a benefit to the coffee trade of this country to see a larger home consumption, but bankers, merchants, steamship owners, wharfingers and many others would greatly benefit by the increase of the trade.

EUROPEAN STOCKS ON NOVEMBER 1ST, 1932

Havre	333,000	bags
Hamburg	247,000	,,
Antwerp	135,000	,,
Netherlands	153,000	,,
Trieste..	160,000	,,
Great Britain..	131,000	,,
Marseilles	59,000	,,
Bremen	90,000	,,
Copenhagen	57,000	,,
Bordeaux	24,000	,,
Genoa	111,000	,,
	1,520,000	bags

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RECEPTION OF COFFEE AND "REGO CONDUCTOR," OR TRENCH CONSTRUCTED FOR TRANSPORT TO PREPARATION SHEDS

Still for our purpose it will be sufficient to refer to the preparation of coffee for the London market, other countries each having their rules and regulations. In the first place, on the arrival of the steamer, the cargo is split up and divided between the various public bonded wharves and warehouses, according to the wish of the importing merchant, though, to consolidate insurance policies, and to save collecting from a great variety of such warehouses, a limit has been arrived at and buyers will only take delivery from certain specified places. If the coffee is to be cleaned—having arrived in the parchment—the process employed has been already described. If it has arrived already cleaned, then the first process is to bulk each parcel separately, so that there may be no question of uniformity, but that one sample may represent the whole. A sample, fixed according to the size of the package, is then drawn and the coffee is refilled into the bags, a small weight is placed in the same scale as the bags, to allow for the sample which has been drawn, and the separate bags are weighed for Customs registration. The amount of sample allowed is as follows—

A parcel not exceeding 150 bags	8 oz. per bag	Not exceeding 10 barrels or 10 cases	1 lb. per pkg.
A parcel not exceeding 300 bags	6 oz. „ „	Exceeding 10 barrels or 10 cases	12 oz. „ „
And all exceeding 300 bags	4 oz. „ „		

It will thus be seen that there is a deficiency in every bag before even the coffee is offered for sale. This would give rise to endless claims and complications, but that an allowance, called draft, is given which covers this first sampling, and generally covers the natural shrinkage which takes place in nearly all kinds, but especially with soft and very new coffees. The draft allowed is as follows—

Bags from 28 lbs. and not exceeding	1 cwt. ..	1 lb.
1 cwt. and „ „	1 3 0 ..	2 lbs.

Exceeding 1 3 0	4 lbs.
Wooden packages not exceeding 3 cwt.	2 „
3 cwt. and „ „ 5 cwt.	4 „
All over 5 cwt.	5 „

The only exception to these allowances are with coffees entered on what are known as "quay terms," mostly confined to all kinds of Brazil growth; with these there is no draft and the buyer has to put up with whatever shortage there may be, though sometimes amounting to several pounds. After being bulked and weighed the coffee is ready for sale, and with very few exceptions is offered by public auction in Mincing Lane. On the day of sale—or, occasionally, but by no means always, on the day preceding—samples are shown in small trays in the various brokers' sale-rooms from where the wholesale dealers have to obtain sufficient for roasting and tasting, and be ready with their valuations by 1.30, the time at which the auctions commence. In the height of the season, when new crops from Costa Rica and East India are arriving in large quantities, this is no light task. As many as 450 to 500 lots will be catalogued in one day, representing probably 150 or 200 parcels, and making an aggregate of from 400 to 500 tons, so that it is almost impossible to roast and taste all these in the three, or at most four, hours of the morning. A buyer, therefore, sees first the raw samples and makes his selection as to which he thinks will be most likely to suit him. This is, of course, the art of the specialist; he is able to judge, as a rule, whether the coffee is suitable for the home trade, or whether it will be taken for export. Many kinds are undoubtedly suited for both, indeed the export trade will take all and any kind "at a price," but to the home trade is reserved the honour of paying the highest prices for the best coffees.

CHAPTER XI

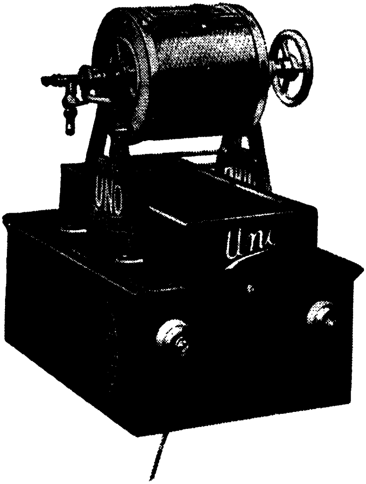
VALUING

HAVING traced the coffee from its original place of growth and followed all the processes necessary to the preparation for market, we come naturally to the question of values and how to set about this most difficult but necessary task. At the outset we must say, what to the uninitiated may seem strange ; there is no simple standard to go upon. An article is worth what it will fetch. For instance, two men are making collections of the works of a certain artist and a fine specimen of his work comes upon the market ; it is evident that its value is finally reached by the length of the purse of one of these two collectors. The crowd in the auction room may whistle, or exclaim " What a price ! " but the buyer has paid what he considered it was worth, and is, or should be, satisfied. There may be a long distance between a notable work of art and an uninteresting looking sample of coffee, but the principle is the same, and a buyer naturally bases his valuation upon what he considers he will be able to obtain for it. This will explain why there are often differences of valuation, by dealers of great experience, of many shillings. For example, an export dealer whose trade lies mostly with the north of Europe, where it is only possible to sell low-priced qualities, will be quite unable to see, by simply valuing in the raw state, the subtle quality and delicate taste which the clever home trade dealer has detected after roasting, and which the wise and discriminating grocer will also appreciate. In valuing by the raw state. colour is the first consideration, a deep blue, or a light green, or a smooth pale, almost yellow, will be chosen in preference to a grey, brown, or dull colourless berry. But there is more than colour, the blue or green must be also of a waxy hard texture; further it must be "heavy," when tossing it lightly in the hand, and certainly free from any objectionable smell. The blue, the green, and the smooth pale are each distinctive colours of different growths, and in addition to some descriptions, notably East India, a sign of quality consists in its being "coated," a term not easy to define, but one that can be easily noted by examination. This was particularly the characteristic of Mysore coffee until, in order to increase the production per acre, seed from the Coorg district was introduced, resulting in a coffee absolutely different in appearance to the old description though often grown upon the same estate. Another consideration in valuing "in the raw" is the size of berry, the bold sizes fetching generally much more than the small. And yet, when one thinks that all coffee has to be ground before it can be made into a beverage, it is natural to ask why should the large berries fetch a higher price than the small? There are two answers. It is unfortunately true that many persons "taste with their eyes"; that is to say, with regard to coffee, the uninitiated, the housewife, will think a bold roasted berry must be better than a small, though experience often says quite the reverse. Moreover, on the Continent a very large proportion of the trade is done by selling to the consumer in the raw state—a coffee-roasting machine is a household necessity in many countries—and here again the housewife, or "frau," selects the bold-looking coffee in preference to the small. At the same time, there is wisdom in this valuation. Who would not, with a plate of cherries in front of them, prefer the fully-developed, luscious red ones, knowing they are the ripest, to the small and only partly coloured ones ? Now coffee is much like the cherry, not only in appearance on the tree, but from the fact that if it has had proper weather, and has been well cared for, most of the beans will have grown and developed, and where large and small are picked off the same tree, as has been done with the A and C size, it is certain that the expert will detect a more subtle and a richer flavour in the bold than in the small. This, the finer flavour, is still more marked with the peaberry ; it, as a rule, is of better quality than even the bold size of the same mark and shipment. Thus it will be seen that valuing may be done on two principles, by appearance and by taste. As a fact, in the home trade both methods are used. The various parcels are, as a rule, first valued by their appearance in the raw state, this may be altered by the appearance in the roasted state, and finally by the quality of taste, or liquor. As a rule, acidity is the first requisite in tasting, but different growths have their distinctive flavours ; for instance, some are " minty," or " nutty," or simply thick. To arrive at the value by tasting, the samples must be all roasted to the same degree—otherwise a comparison cannot be properly arrived at. The question of what weight to use for each sample is a matter of individual custom, and varies from the weight of a halfpenny to a sixpence and a halfpenny, to one penny. The latter is the limit if it is to be tested in the usual sampling cups. The coffee should then be ground direct into the cup in which the infusion is to be made. As soon as the water thoroughly boils—not before, and not after it has been long boiling—fill the cups up to three parts full, stir them up thoroughly so as to ensure that all the ground coffee has become watered, pour in the remainder of water to properly fill each cup, not spilling it over, but filling so that each has the same amount of water. On the top of each cup will be a frothy scum, whether this is removed or not is immaterial, but it is customary to do so as at least it looks more palatable, there is, however, no virtue or flavour in it, so that it makes no difference whichever is done. The coffee will then all settle to the bottom of each cup, and by the time it has settled, say about three minutes, it will have become sufficiently cool to taste and will have allowed sufficient time for all the goodness to have been extracted. It seems hardly necessary to say it, and yet until people are accustomed to tasting coffee they often make a great mistake in treating it like tea. They forget that if they dip their spoon too deep they will stir up the grounds and make the infusion muddy for a second spoonful, even if not for the first. The spoonful should therefore be taken gently from the top of the cup.

CHAPTER XII

ROASTING

An old adage, familiar to many, yet quite changed, or rather, impossible to use now in its original sense, runs that " Good wine needs no bush." If we reverse and slightly alter the thought we may come to the conclusion that good coffee does need good roasting. Roasting is without doubt the most important part of the coffee dealer's business. You may buy the very best quality and yet sell most inferior coffee, though it must not be thought that good roasting can make inferior coffee into a fine quality. Still it is quite certain that some inferior coffee, if carefully and correctly roasted, will make a more palatable beverage than very fine coffee badly and incorrectly roasted. On the subject of to what extent coffee should be roasted there is a great difference of opinion. Even here in our own country there is by no means one standard, but in other countries, and those where far larger quantities are consumed, there is not so much diversity. One point, the most important point that decides how highly a coffee should be roasted, is its growth. And here we may say at once that, such being the case, namely that different growths require different degrees of roasting, those machines are of no real value which have been patented after so much labour, and in many respects are most excellent, but which are so constructed that just before the roast is finished a warning bell is rung. For unless the dealer is to confine himself to one quality and growth only, he will want constantly to alter the settings or to ignore the warning. Speaking generally, there is no question that we in this country roast to a much lighter degree than in any other. This is a curious fact, and some have argued that it is largely owing to this cause that our consumption is so much smaller than in those countries where the roasting is done to a higher, in fact much higher, degree. It must, however, be borne in mind that small though our consumption is, it is mostly made up of the finest growths with the most delicate flavour, and even in countries where high roasting is the rule, the finer grades are usually less done. If coffee is roasted highly this delicate flavour is destroyed and it would be needless to continue to use the fine qualities. Moreover, coffee that is highly roasted will lose its aroma quicker, in fact, will change its quality by developing a fresh



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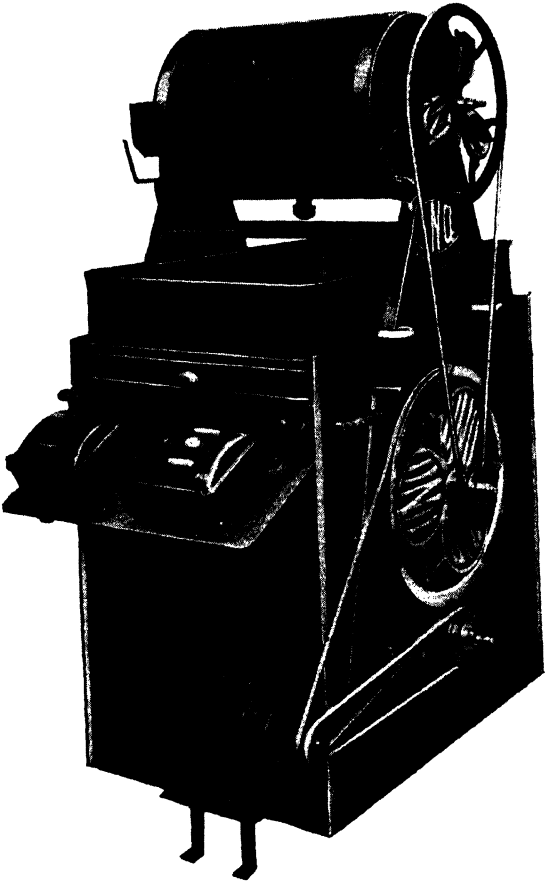
3-LB. CAPACITY ROASTING AND COOLING UNIT
GAS HEATED

flavour which is by no means palatable if kept any length of time; and as it is generally the custom here for the housewife to purchase it once a week, or even at longer intervals, it is evident that on this account alone it should be only sufficiently done and on no account burnt. In France and Germany roasting is done to a considerable degree higher than here, while in Scandinavia it is—according to our own standards—quite burnt. In America it is mostly roasted higher than with us, and in addition a glaze is added of which we shall have to speak later. In Brazil coffee is roasted probably higher than in any other country, certainly than any country where the consumption is large, and it is very heavy indeed there. In nearly all these countries, however, certainly in Brazil, the coffee is consumed almost immediately after roasting. Climate and custom have perhaps much to do with the advantages or otherwise of highly-roasted coffee; as an example, the writer was once spending a holiday in Switzerland, where he could not get a cup of good coffee, and indeed had not had one since he left home, in spite of all the supposed virtues of "coffee on the Continent." On the top of a high pass he and his party all agreed that they at last had found a good cup. On asking to be allowed to see from what it was made, he was shown an extremely badly roasted sample, some berries burnt and others pale, and the raw was a description which in this country is never used on account of its common and objectionable flavour.

The following account gives a scientific account of what takes place in the process of roasting—

Coffee undergoes essential chemical changes in the process of roasting. In the raw or natural state the coffee-bean is tough and horny in structure, and entirely devoid of the appearance, character, and peculiar aroma that so distinguishes it in the roasted condition, and by which it is best known to the public. The testa or investing membrane of the raw bean has a layer of long cells with a peculiar pitted structure, containing a crystaline substance chemically termed caffeine, and another known as caffeic, or tannic acid, while the inner substance consists of an assemblage of vesicles of an angular form, the cavities of which include in the form of little drops a considerable quantity of a highly aromatic oil technically termed caffeone, on the presence and amount of which the fragrance and active principles of the coffee depends, and by which its commercial value in the roasted state is estimated. The existence of this " coffee oil " makes itself known in a striking manner by roasting ; being driven out of the beans by the intense heat, it is partially volatilised and, together with other products of the roasting, produces the characteristic aroma peculiar to roasted coffee, an odour possessed by no other known substance. In the operation of roasting, the beans swell up and open at the furrow by the liberation of the gases within their substance, their weight decreasing, but volume increasing in proportion to the extent to which the operation is carried, developing the aromatic oil and liberating at the same time a portion of the caffeine from its combination with the caffeic, or tannic acid. The amount of this aromatic oil contained in coffee varies from 8 to 13 per cent, at least one-half of which is lost by evaporation during the roasting process, so that it may prove a paying experiment to attempt to collect it, especially in large establishments where large quantities of coffee are roasted and several pounds of this valuable oil are dissipated daily, which would no doubt find a ready market at a good profit for the making of liqueurs, or medicinal use.

Before being roasted coffee also contains from 6 to 8



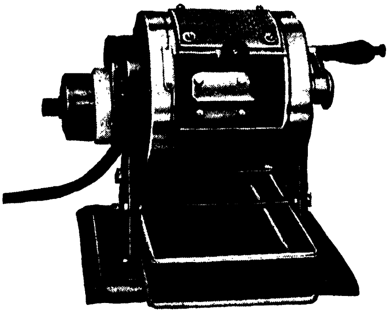
By the courtesy of the Uno Company

14-LB. ROASTING AND COOLING UNIT
ELECTRICALLY HEATED

per cent of sugar, which after roasting is reduced to as low as 1 per cent and sometimes even to zero, from which it would appear that the description of sugar present in the raw coffee suffers destruction during roasting, which, however, is not the case, as in the process of roasting the saccharine matter in the raw bean is converted into caramel. A change in the fat of the raw coffee is also brought about by the roasting, for where ether extracts only some four to five parts of fat from the raw coffee beans, it readily extracts double that quantity from the roasted beans. So striking is this fact that Von Bibra has even credited the roasting process with the production of fat, whereas the action is only mechanical in bursting the fat-cells of the raw bean, thereby rendering the fat accessible to the solvent action of the ether.

The operation of roasting also tends to make coffee soluble in boiling water, as when raw coffee is perfectly exhausted by means of boiling water, it yields up only 25 per cent which passes into solution, while roasted coffee, on the other hand, when completely exhausted by means of boiling water, yields readily upwards of 40 per cent of soluble matter, proving that in actually using coffee as a beverage we are not in the habit of making anything like a complete extraction, as only some 10 to 12 per cent of the active principles of the coffee passes into the liquid.

Such being a few facts about what takes place during roasting, what is the best system to adopt ? What is the best fuel ? The great object to aim at is to obtain a berry which is equally roasted inside and outside. To this end electricity would give the most perfect roast, for it has a penetrating power unknown to any other. A machine has been invented and proved most excellent in operation, but the cost, not only of the electricity, but of "wear and tear," and consequently renewal of plant is at present prohibitive from a commercial point of view. Of the two other kinds, gas or coke, it has been demonstrated, times without number, that the latter gives much better results when roasting on a large scale. For roasting in this way there is nothing better than the old malleable iron cylinder, fitted with gauze ends—a most important item, as the liberated gases are thus allowed to escape. The cylinder revolves over a clear coke fire, and is internally fitted with an ingenious arrangement of eccentric bearings by which means the coffee is constantly kept moving, being thrown from side to side in order to secure a thorough roast of the whole contents and not a part properly roasted and a part not thoroughly done. By an arrangement in the handle a small scoopful can be withdrawn in order that the operator may know the exact moment at which to empty the cylinder. Too great haste in the roasting, or a few degrees of heat too much will char the berries



By the courtesy of the Uno Company

½-LB CAPACITY SAMPLE OR DOMESTIC ROASTER ELECTRICALLY HEATED and spoil its flavour. On the other hand, too little heat and consequently too much time taken in roasting will spoil the flavour in another way. It will thus be seen that coffee-roasting is an art, which cannot be learnt in a few hours, or even days, but one which requires not only time, but also care and attention. When, however, the roasting is completed there remains the cooling process, and this is almost as important as the roasting. Where there is sufficient room the cylinder is drawn back and opened, by means of the slide, directly over a tray, or box, with a woven wire bottom, through which air is forced either by a blast or a rotary fan. The importance of cooling rapidly is due to the fact that the moment having arrived when the coffee is roasted, if simply turned into a tray and allowed to cool gradually, the chemical changes would continue to be developed, and thus the correct flavour would be destroyed, whereas by rapid cooling (the quicker the better) this development is checked, and the coffee remains roasted to the exact point at which it was withdrawn from the cylinder. There are, of course, very few grocers who have accommodation sufficient for such machinery—and therefore have to be content with a small gas roaster. For this purpose a machine can be obtained either with the flame under, or within the cylinder. In either case the gas is mixed with a blast of air upon the principle of the bunsen burner. In some a sheet of talc is inserted by means of which the coffee can be watched as it is roasted ; this, however, is not really as satisfactory as the arrangement of a sampling rod in the handle, for the talc becomes blurred by steam and smoke. There is yet one other system namely, by roasting in small ½-lb. or 1-lb. cylinders as can often be seen in shop windows. The latter is of course the most expensive, for not only has allowance to be made for the loss of room, but there is in addition the time taken up and the operator's wages. There comes in as well the difficulty of quick cooling, and if this can be overcome there is no question that not only a better roast, because a more perfect aroma, can be obtained from the small cylinder than from either of the large ones. Great care must, however, be taken that each roast is done to the same degree, otherwise if several roasts are bulked together a mottled appearance will result together with inferior infusion.

Without such quick cooling, a better roast can often be obtained from the large coke roaster, operated by an experienced workman, than from the small cylinders, especially where the operator has not been properly trained. The roasting in small cylinders, in full view of customers, was at one time a very excellent advertisement, but the novelty has largely worn off, the practice having been adopted by at least one grocer in nearly every town. The aroma of roasting is undoubtedly still a means of drawing attention to the article and often leads to sales being made. Alas, that such should be the case, for it would be much more satisfactory if coffee were looked upon as a necessity, in fact an article of daily consumption as bread and, certainly, as tea.

The above has referred exclusively to the ordinary roasting, namely that which produces a berry in colour varying from pale cinnamon to a dark chestnut and, as has been said, the finer the coffee the paler it should be roasted. There is also the " French " roast, which is obtained by simply adding a small quantity of soft sugar to the roast some little time before the operation is completed, say about three parts done. The limit of sugar allowed by the excise for this is 3 per cent only, but that is quite sufficient for the required purpose. Coffee wanted for mixing with chicory is mostly so treated ; it is also largely done to produce " black " or

" after-dinner " coffee ; in this case the coffee has also to be roasted to a much higher degree. Such treatment is not really necessary for the making of black coffee, but it is often adopted. Mention was made just now of excise regulations. It may not be generally known that public roasters are all under excise supervision. Indeed all roasters are liable to inspection, as it is illegal to add any substance (except sugar as above) while roasting. The reason is that the addition would add weight to the " returns " and thus defraud the revenue. Cases have been known in this country, and it is possible that it is still done to a small extent, but the penalty, if found out, is very heavy, and tends to check those who might otherwise act fraudulently. In some parts of the Continent and largely in America it is a common thing to coat coffee with a resinous or glutinous compound known as " glazing." This is done partly to hide light berries in the roast and partly to make a more handsome and showy appearance, an advantage where the sale is generally of the whole berry, and not as is mostly the case here, in the ground state. To conclude, we may say that fresh grinding is really more important than fresh roasting. A grocer should be prepared to grind freshly for each customer and mills attached to electric motors are now so prevalent that such can easily be the case. At the same time, it would be better to encourage the householder to grind it for himself. Coffee should not be coarsely ground ; if so, the infusion will take much longer to make and in fact will not give as good a result as when ground to a powder.

CHAPTER XIII

BLENDING

We may ask, is this always necessary? To this there can be but one answer: No, it is not necessary, but it is often beneficial. There are certainly a very large number of grocers who are content to use one kind only, and there are many coffees which are perfectly good and useful by themselves. In fact, excellent coffee can be made with any one description by itself, and speaking generally, in all probability the bulk of the coffee consumed throughout the world is not a mixture of even two kinds. The Brazilian would be astonished at the suggestion that any other coffee should be mixed with his own product for his own drinking. The planter in India or Ceylon, in fact the inhabitants of any coffee-producing country, would not think of importing other kinds to mix with the home product, while in the great consuming countries of Europe and the United States of America, though there is a great deal of blending carried on, there is also a great quantity sold without such blending.

Now with regard to the art of blending—and there is an art in it—no well-defined rules can be laid down, for, in the first place, much depends upon the water in the locality where it is to be consumed, and, secondly, a grocer should aim at producing something just different to his neighbours and competitors, but one which will be in one way or another superior. To understand then how best to blend, a knowledge of the characteristics of the different growths is essential, and yet to describe them is almost impossible, for, as has been previously said, a taste cannot be really described in words. Further, no growth has one particular flavour in all its various grades. There is as much difference between, say, an early shipment of a fine, bold, London cleaned, J. Dent, Costa Rica, and one of the last shipped, foreign cleaned, of the same mark, containing as it may one per cent of " blacks," and as there is between that same fine Costa Rica and many a parcel of Colombian. What follows, therefore, must be taken to apply principally to fine grades of the different growths, though it will equally apply to the other grades if they are blended together in their various grades, and not allowing the common ones to be mixed with and spoil the finer qualities.

Costa Rica. We take this kind first simply because it is undoubtedly the greatest favourite in this country, and not because we consider it the finest flavour of any kind. It is, however, in most years in most plentiful supply, for curiously it is not a great favourite in any other country, and yet it is a good self-drinking description. In taste its characteristic is acidity—there is a wide difference between acidity and sourness—a sour taste is most objectionable, but an acid one is, on the other hand, most pleasing. At the same time most Costa Rica is thin, and perhaps there is no description of fine coffee, unless it is Mexican, which requires more care in selecting, for—owing to the soil possibly—it occasionally develops a flavour known as " bricky," or, worse still, unclean. If carefully selected, therefore, this kind may safely form the basis of most blends, and especially when the water is soft.

East India. Here again there is a vast difference of flavours varying from a thick, rich, pungent Mysore, through a strong Naidoobatum or Neilgherry with often almost as much " body " as a Mysore, down to an acid yet full bodied Coorg. An excellent blend can be made with equal parts of a fine Mysore or Naidoobatum mixed with Costa Rica ; or with a smaller or greater quantity of the Indian growth according to the hardness or softness of the water, East India developing perhaps best in the hard water. These two kinds are without doubt the principal favourites of the United Kingdom, and perhaps wisely so, as the bulk of both these crops are generally shipped here, and consequently there is, as a rule, a good selection at all times of the year. There are, of course, many other kinds used, but for anyone who is going to adopt such for their best blends, it will be advisable to secure sufficient for a year's supply, when the crops first arrive, as they are often not to be had as the season advances.

Jamaica. The finer grades of this description are undoubtedly the finest coffee that is grown. They may be described as acid and yet very thick, while there is a certain peculiar " nutty " flavour with the finest of all, which makes them stand out from any other coffee, and when used judiciously in a blend will give point and tone unobtainable elsewhere. Another characteristic which is greatly to its benefit is that Jamaica retains its aroma after roasting longer than any other kind, though both Ceylon and Mysore come not very far behind in this respect. This is a feature which perhaps has not received as much attention as it should have, but as long as householders will buy a fortnight's, or even a month's stock at one time, it is evident that the growth which is least likely to become flat is the one which should be most used.

Vera Paz. It is rather surprising that this description is not a greater favourite. If carefully selected it is one of the most useful for blending purposes. It has an exceptionally thick liquor and when mixed with Costa Rica gives it " body " and " tone " such as is sure to be

By permission of H. Luscombe Toms

DELIVERING COFFEE—COSTA RICA

appreciated. Some of the finest bold parcels of this growth will fetch nearly as much money as the choicest Mountain Jamaica, but the smaller sizes, which sell at much the same price as Costa Rica or even cheaper, are of excellent quality and should be used more than they have been. It needs care in selecting, and more even than some other growths, for it is particularly liable to deteriorate with age. Last season's coffee will probably have become "woody," but as there is not a large quantity of this growth, and it is said that it is likely to be less, there is not much chance of the crops overlapping one another.

Colombian. This is a coffee which may often be used with great advantage for a medium and cheap price. Its chief characteristic is thickness, and at the same time, in many cases, a rich piquant flavour which will come through a blend of other kinds and produce a very favourable liquor, particularly where a high roast is desired. When kept for some length of time this growth will produce a decidedly mellow flavour which has often been compared to a Java. Particularly was this the case in 1903-4 when large quantities of old crop arrived after the closing of the revolution which had lasted for three years and had delayed the forwarding of the successive crops. Those parcels that had been carefully stored, so as not to become musty, were much sought after both in Holland and the United States to mix in the raw state with Java, and it was often difficult to detect that this had been done.

Mocha. Here is a coffee so absolutely different in flavour from any other that its mixture can very readily be detected. It is not wise to use this coffee by itself, for in very few cases would it be liked. When the taste for it is once acquired its absence will be immediately detected and therefore, unless it is always going to be used, it should not be introduced. A very small quantity will, however, greatly improve most blends, even as little as ten or fourteen pounds to the hundredweight will give an additional thickness, and, generally speaking, a " body " which will make a blend stand out and be more highly appreciated.

Mexican. There are many grades of this growth, and if the hard " flinty " kinds be secured they may be used very satisfactorily, often taking the place of the Costa Rica in a blend. At the same time, it is particularly needful to exercise care in purchasing this growth and it is not wise to store it for any length of time, as it is liable to become musty or rank.

San Paulo. During the last ten years or so there has been a great improvement in this growth. From being badly prepared for market and nearly always of a bricky flavour it is now possible to buy it fit to mix in with many of the cheaper and medium blends. Much more care has been taken in the cultivation. Many estates have been planted with trees grown from the finest East Indian and Arabian seeds, and with the rich fertile virgin soil, which is a characteristic of this particular province of Brazil, a coffee has been produced which has grown in favour in all parts of the world. It can be and is largely used, either by itself for a distinctively cheap quality or blended with others, to reduce the price, yet not materially reducing the quality.

As has been said, no hard and fast rules can be given as to the blending of coffee, but it is hoped that sufficient has been here described to allow of an intelligent use to be made of the various kinds, so that it will be possible for anyone to produce a mixture of the various kinds, to please all the varying fancies which are demanded by different consumers.

CHAPTER XIV

THE ACTIVE PRINCIPLE OF COFFEE AND ITS MEDICINAL PROPERTIES

THE stimulating and refreshing action of coffee is mainly due to the presence of caffeine and a volatile oil. Caffeine belongs to the group of substances known as alkaloids, which as a class have usually a bitter taste and are only slightly soluble in water. Amongst other well-known alkaloids are cocaine, the active principle obtained from coca leaves; morphine, codeine, and narcotine, the essential constituents of opium; quinine and cinchonine, to which the bark of cinchona owes its properties; theobromine contained in cacao. Theine, the alkaloid of tea, is practically identical with caffeine, and both are very similar to theobromine. Paraguay tea, or maté, and kola nuts contain caffeine.

The quantity of caffeine present varies greatly in different species of coffee. It is never very large in amount, slightly under 2 per cent of the dry seeds being the highest recorded. Analyses of Arabian coffee show a range of between ·7 and 1·6 per cent, whilst Liberian coffee varies from about 1 to 1·5 per cent. The wild Sierra Leone coffee (*Coffea stenophylla*) contains about 1·5 per cent. Four species of coffee, natives of Madagascar or of the neighbouring islands, do not contain any caffeine.

Though it is impossible to give one definite analysis, the usually accepted standard is one issued by a French savant, M. Payen; it is as follows—

Fat	10 to 13	parts
Water	12	,,
Caffeine	·8	,,
Cellulose	34	,,
Legumen and cassein	10	,,
Glucose, dextrine and organic acid	15	,,
Caffeone and aromatic oils	·002	,,
Caffetannate and potassium	3 to 5	,,
Viscid essential oil (insoluble in water)	·001	,,
Ash and other mineral matter	6	,,
Other nitrogenous substances	3	,,

The effect of roasting is to change many of these chemical constituents. What takes place is described by Messrs. A. W. and M. W. Blyth in their book on *Foods, their Composition and Analysis*, as follows—

" The effect of roasting is to drive off a large quantity of water, to volatilise a small quantity of theine, to change a portion of the sugar into caramel, to rupture the cell-layers containing fat and albumen, and to swell the berry by the extrication of gases, consisting mainly of carbon dioxide. There is also developed a fragrant aromatic substance, a single drop of which is sufficient to scent a large room with the peculiar coffee odour; the best temperature for the production of this aroma is 210° C. That during roasting there is an actual loss of theine is easily proved by holding a glass plate over the heated berries; in a very little time crystals of theine condense. Tenneck found in unroasted coffee ·75 per cent, and in the same roasted, ·42 per cent theine."

The principal changes which take place during roasting appears from the following tables to be, that the quantity of sugar is largely reduced, while there is a considerable increase in the extractive matter, some of which is of a nitrogenous character.

	Raw.	Roasted.
Ash	3·97	5·17
Fat	11·42	8·30
Water	8·26	0·36
Sugar	8·18	1·84
Gluten	10·68	12·03
Caffeine	1·10	1·06
Cellulose	42·36	44·96
Extractive matter ..	14·03	26·28
	100·00	100·00

It is extremely unfortunate that it is so little known what a valuable substance coffee is, and that, too, in such different ways. No doubt its chief feature is that it is a stimulant, it acts directly upon the heart, increases the frequency of the pulse, and sustains the strength under prolonged and severe muscular exertion. It is an antisoporific, and is useful in narcotic poisoning. For this reason it is frequently used by those who have to study until late hours; indeed in its early days it was largely used by monks of many nationalities to overcome drowsiness during long nocturnal vigils. It is further said to be valuable in cases of spasmodic asthma, and to have been successfully used in cases of hysteria. Fresh roasted coffee, freshly ground, is also a valuable disinfectant, and may be most advantageously used in a sick room, by sprinkling some on a chafing dish, foul and noxious exhalations are almost immediately neutralized or dispelled. It is a well-known fact that those engaged in the roasting of coffee are less liable to incur disease in times of epidemic. It is also on record that during a virulent outbreak of small-pox in the East End of London there was not a single case in any of the small houses that abutted upon a large coffee-roasting establishment, though there were many cases in the adjoining streets. The medical officer of health attributed this immunity solely to the fumes of the roasting penetrating through the open windows of the factory to the houses surrounding.

The following facts are reported by the British Consul in Colombia—

THE USE OF COFFEE FOR MEDICINAL PURPOSES

In the year 1906, Dr. L. Restrepo, of Meddellin, the capital of the department of Antioquia, in the Republic of Colombia, South America, convinced himself that the husk of coffee was of great utility in the treatment of several diseases, and that in malaria it sometimes succeeded where quinine had failed. Having regard, on the one hand, to the immense importance of such a discovery, if it were verified, and, on the other hand, to the remoteness of the Republic of Colombia from the acknowledged centres of medical activity, the German legation at Bogota, the capital of the country, forwarded copious details of Dr. Restrepo's observations to the proper authorities in Berlin—of course, without anything of the nature of official endorsement.

Dr. Restrepo at first used an infusion made with 45 grammes of crushed coffee (in the husk), and 400 grammes of water. This was boiled for five minutes, strained and taken in one day in six doses. With this medicine he successfully treated five patients, of whom three suffered respectively from intermittent malarial fever, chronic malarial fever, and pernicious fever, and two suffered from enteric colic or chronic dysentery of malarial origin. Before taking this infusion, patients had all been declared fatal cases, given up by well-known doctors of good repute. Restrepo afterwards made this

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GENERAL VIEW OF COFFEE ESTATE

infusion with 30 grammes of coffee husk alone in place of 45 grammes of crushed coffee, the other details of preparation and the dose being as before. With this he says he treated hundreds of cases, not one patient died, and a cure resulted in every instance.

An eminent Vienna oculist in the last century has held that the vapour from pure, hot, freshly-made coffee is beneficial to the eyes, further that he has traced many cases of affections of the sight to the constant use of chicory, and even to preparations of mixtures of coffee and chicory. A remarkable remedy for rheumatism and gout is said to be as follows: A pint of hot, strong, black coffee, which must be perfectly pure, and seasoned with a teaspoonful of pure black pepper, thoroughly mixed before drinking, and the preparation taken just before retiring.

At various times paragraphs have appeared in the newspapers stating that the constant use of coffee is injurious. No real facts in support of this have been produced, in fact the action imparted to the nervous system is both natural and healthy, and it has been proved that habitual coffee-drinkers generally enjoy good health and spirits, some of the longest-lived people having used coffee continually from their earliest infancy, without experiencing any inconvenience.

Like everything else, no doubt, coffee may be taken to excess. The amount of caffeine contained in 3 lbs., if extracted and taken pure, would be sufficient to kill a man. The operation of caffeine upon a number of selected healthy persons has been tried with very varying results. Some were scarcely affected, others from the same dose suffered from a full, irregular pulse, trembling limbs, headache, flashes before the eyes, sleeplessness, a sort of intoxication, with an unfitness for all physical and mental labour. The moral is to be moderate in the use of coffee, it being then beneficial, and to avoid excess. It is stated of Voltaire that being told by his physician that " coffee was a slow poison," replied : " Yes, I know it is a slow poison ; it has been poisoning me for over seventy years " ; while of President Krüger, who lived to be over eighty, it was said that he had a jug of coffee always on his table.

CHAPTER XV

COFFEE ADULTERANTS AND SUBSTITUTES

THE history of the regulations with regard to coffee and chicory is rather curious, inasmuch as coffee appears to have been adulterated almost immediately after its introduction, and legislative interference was soon necessary.

The first Act (5 Geo. I, c. 11, 1718) with regard to coffee recited that: "Whereas divers evil disposed persons have at the time of, or soon after, the roasting of coffee made use of water, grease, butter, or such-like materials, whereby the same is rendered unwholesome, and greatly increased in weight to the prejudice of His Majesty's revenue, the health of his subjects, and the loss of all honest and fair dealers in that commodity," and went on to enact that "any person or persons whatsoever, who shall at the roasting of any coffee, or before, or at any time afterwards, make use of water, grease, butter, or any other material whatsoever, which shall increase the weight or damnify or prejudice the said coffee in its goodness, he, she, or they shall forfeit the sum of £20 for every such offence." This penalty was increased to £100 by a subsequent Act (12 Geo. I, c. 30), passed in the year 1724.

An Act passed in 1803 (43 Geo. III, c. 129) ordered that: "If any burnt, scorched, or roasted peas, beans, or other grains, or vegetable substance or substances be used, prepared, or manufactured for the purpose of being an imitation of, or in any respect to resemble coffee or cocoa, or to serve as a substitute for coffee or cocoa, or alleged or pretended by the possessor or vendor thereof so to be, shall be made or kept for sale, or shall be found in the custody or possession of any dealer or dealers of coffee or cocoa, or any burnt, scorched, or roasted peas, beans, etc., not being coffee or cocoa, shall be called by its preparer or manufacturer, possessor, or vendor thereof, by the name of coffee, or by the name of American cocoa, or English or British cocoa, or any other name of cocoa, the same respectively shall be forfeited, and, together with packages containing the same, shall or may be seized by the excise." The person convicted was to be fined £100.

A subsequent Act (3 Geo. IV, c. 53) permitted persons, not dealers in coffee, to sell roasted corn, peas, beans, or parsnips whole, but not ground, crushed, or powdered.

In 1832 grocers were allowed by the excise to keep chicory on their premises, and a Treasury Minute, dated August 4th, 1840, allowed the sale of coffee mixed with chicory, a step which no doubt opened the way to wholesale adulteration. This is evident from a meeting of those interested in the coffee trade, held at the London Tavern, on March 10th, 1851, in which the Chairman, T. Baring, Esq., M.P., explained that although more of what was called coffee was now consumed, yet that there was a less consumption of genuine coffee. "We wish," he continued, "to come to the real question, and we desire that it should be publicly understood that what is coffee be sold as coffee, and that what is not coffee, being a cheaper article, and, if you will, a more nutritious article, and as eligible for consumption, be sold to the consumer at the price at which it can be afforded." A grocer from Shoreditch having produced at the meeting a compound of burnt peas, dog-biscuit, prepared earth, and a substance "which," he said, "I shall not describe, because it is too horrid to mention," went on to affirm that several

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A FOREST TO BE CLEARED FOR A COFFEE PLANTATION tons of the same material were in existence, and that it was used as a substitute for chicory and for snuff.

Section 7 of the principal Act enacts that " no person shall sell any compound article of food, or compounded drug, which is not composed of ingredients in accordance with the demand of the purchaser; penalty not exceeding £20."

Section 8 provides " That no person shall be guilty of any such offence as aforesaid in respect of the sale of an article of food or a drug mixed with any matter or ingredient not injurious to health, and not intended fraudulently to increase its bulk, weight, or measure, or conceal its inferior quality, if at the time of delivering such article or drug he shall supply to the person receiving the same a notice by a label distinctly and legibly written or printed on or with the article or drug, to the effect that the same is mixed." This label, by the 12th section of the 1879 Act, is to be legibly written or printed, and not obscured by other matters on the label.

It is difficult to know whether chicory should be described as a coffee adulterant in all cases, because there are many people who prefer the addition of chicory.

Chicory is prepared from the fleshy roots of *Cichorium Intybus*, a plant closely related to the lettuce, and found wild throughout a great portion of Europe, North Africa, Siberia, and Northern India. In parts of the United Kingdom it is a conspicuous wayside plant with cornflower-blue flowers. Chicory was formerly the basis of an industry of some importance in England, and at one time about half the chicory used in this country was produced at home. About 1860 over 1,500 acres were devoted to this crop in Yorkshire alone. Various circumstances, however, have effected a great reduction in the crop. The removal of protective duties in 1854, coupled with the imposition of excise duties from

1860 onwards, had much to do in bringing about this result. The total area under chicory in the United Kingdom is now only some 250 acres, and the preparation of the roots is only practised at York and St. Ives. At the present time the home-grown article contributes merely about two per cent to the annual consumption, the great bulk of the imports coming from Belgium.

In addition to its legitimate use, which should be for the leaves to be used as an esculent, the chicory root is employed to adulterate coffee, and sometimes as much as ninety per cent of chicory has been detected in ground "coffee." A simple test whereby to detect the presence of chicory is to put a little of the ground material in a glass of water. Coffee remains hard and floats on the surface for a long time ; chicory soon softens, and sinks, colouring the water more or less brown.

Before the last "Adulteration Act," and even now in foreign countries, the substances which have been found as adulterants in ground "coffee" are very varied, including cereals, sawdust, bark, cacao husks, acorns, figs, lupine, peas, beans and other pulses, and even baked liver. Colouring materials are also used to improve the appearance of poor and damaged beans. Artificial beans composed of such ingredients as flour, chicory and coffee, or bran and molasses have been manufactured, the mixture being ground up, made into a paste, and moulded into the form of the genuine article.

There are a few seeds which make a palatable infusion with water and are used to some extent on the Continent as substitutes for coffee, although they lack its stimulating properties. One of the best known is Negro Coffee, or Mogdad Coffee, the seeds of *Cassia occidentalis*. The seeds of a species of Ipomea, the ochro (*Hibiscus esculentus*), and the soya bean are also employed for the same purpose.

Chicory is the only article recognised in this country as allowable to be mixed with coffee—a recent Act has sanctioned other substances, provided that in addition to the ordinary duty, an excise stamp of the value of twopence per pound, shall be affixed to the tin in the same way as a patent medicine stamp is. Probably the two articles most used for this purpose are malt and dandelion root, both quite harmless, but neither, any more than chicory, being of the substance, or to be compared with, coffee for its dietetic value. Chicory root has but one qualification, namely, that it is a diuretic, but there are probably few who know this and certainly many who take it would not like to think that they were habitually dosing themselves with a drug. Such, however, is the case. Where a taste for pure coffee can be cultivated it will be found that chicory is abhorred, and generally a more regular and lasting use of coffee will be assured. Chicory lacks altogether the stimulating properties of coffee, and it will be often found that those who take to coffee and chicory—which by the way is so often chicory and coffee—will often discontinue its use for a time, as they find that there is something which does not agree with them and do not realise it is the chicory and not the coffee. It is true that the addition of chicory allows a mixture to be sold at a price which is more within the reach of the many than pure coffee is, and on more of an equality, for cheapness, with tea, yet unquestionably there are numbers who could well afford pure coffee who from habit, or some other cause, have become accustomed to the mixture and hardly know the taste of pure coffee.

There is an old story told of one of the Presidents of the French Republic; how that being in rather an out-of-the-way place on a holiday tour, he entered an inn and enquired if they had any chicory they could show him. Some was brought and he enquired had they any more, the answer being in the affirmative, that also was brought. When he was satisfied that all the chicory in the house was before him, he turned to " mine host " saying, " Now make me a cup of coffee." There are few places in England where such could happen, as chicory is very rarely bought separately.

It is also surprising the number of patent concoctions that are constantly being brought out to masquerade as coffee. They mostly come from Germany, where from all accounts they have a large sale, but why they should be foisted upon the public as coffee it is most difficult to understand, and certainly ought never to be encouraged by anyone connected with the legitimate coffee trade, seeing they have absolutely no connection with the article itself. Fortunately these substitutes have, in this country, found little favour, but on the Continent and in the United States they have interfered very considerably with the trade as the following testifies—

The *American Grocer* for January, 1908, states that " undoubtedly the expenditure of one million dollars a year in an advertising campaign to discredit coffee in the interest of nostrums masquerading with the name coffee attached to a proprietary trade-mark has had the effect, not to reduce coffee consumption, but rather retard its increase."

There can be little doubt that advertising is largely the cause of the great consumption of these mixtures put up as " French " coffee, mixtures which return their proprietors such large profits that they are able to spend pence per pound in advertising. Probably if a campaign against these mixtures could be instituted on the lines of the " Fine Tea " campaign, much might be done to open the eyes of the public to the fact that they are paying a high price for a cheap article, and that, too, one that only contains a very small proportion of the stimulant which is so valuable and useful—a handbill, for instance, giving the analysis of pure coffee and pointing out that the addition of chicory necessarily reduces the various important constituent parts.

CHAPTER XVI

IS THERE ANY WAY OF INCREASING THE CONSUMPTION ?

MUCH has unquestionably been done of late years to call attention to coffee, and many grocers have reaped a good harvest by persistently endeavouring to cultivate this branch of their business. Alas ! it must, however, be confessed that, judging by the Board of Trade returns, the consumption in the whole kingdom has remained almost stationary, and the only conclusion to be drawn is that those grocers who have increased their trade have done it at the expense of their neighbours. If such is so, then it behoves all who take any pride in their business to stir themselves, and see what they can do to remedy this state of things ; for it is incontestible that probably nine persons out of ten will tell you that they like coffee but do not drink it. If then its benefits be brought before all alike, it must result in an improved demand and consumption.

The roasting of coffee in the shop is undoubtedly an excellent way of attracting attention to it, but it is most important that the same should be done with care and under supervision. If it is left to whoever can be spared, the result will be that no two roastings are alike and a mixture of half-burnt and half-raw coffee may be sent out, simply fatal to success, in either attracting new customers or long retaining old ones. Under the head of " roasting " it has been already said that coffee must be freshly ground, and to this end a grocer might wisely stock a reliable household mill, which he might offer to those who were in the habit of buying it ground less frequently than every day. He might introduce a system of coupons whereby a mill would be given after a certain number of purchases, with the almost certain result of an increased trade from the great benefits that the consumer would experience from coffee made from the freshly ground berry. Unfortunately, it is only too true that in the average household there is a strong objection to trouble, and this will be a drawback to the introduction of mills for grinding. When this is the case it would be well to encourage the delivery of coffee at the house every day in order to ensure freshness. To win new customers there is probably no better way than giving a demonstration of coffee-making, together with the presentation of a cup of hot, well-made coffee to all who will take it. There are numbers in every town who have never tasted coffee pure, even if they have tasted that which passes for such under the name of " French " or " Essence." To these a cup of really good, pure coffee will come as a revelation, and is almost certain to induce a desire for a closer acquaintance with it. When once a taste for such has been stimulated and the benefit of a cup at breakfast, and perhaps after dinner as well, has been found out, the continued use of it is assured to the abolishing of all other substitutes.

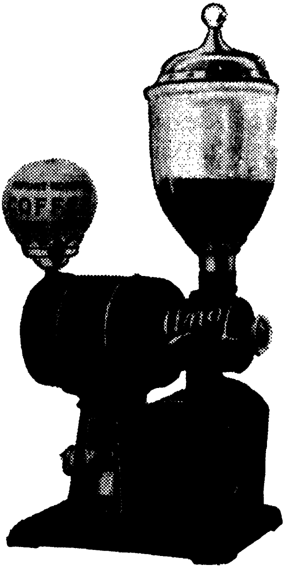
CHAPTER XVII

COFFEE-MAKING

THE making of coffee is another point that the general public require to be educated in. There are probably dozens of patent contrivances each described by their inventor as the only one whereby coffee can be properly made, just as there are scores of recipes which might be tabulated under the heads of simple, elaborate or impossible. Some of these latter tell you to boil it; some never to boil it, only bring it to the boil; some require broken up egg-shells to clear it; some, fish scales. The following is a specimen of what has been recommended, and deals not only with the making but with the roasting. Like many of these old recipes there are difficulties that need some explanation; for instance, how are you to " crack with the teeth " that which is burning hot? or, how, after roasting till it is black, can you continue until it is white?

COFFEE-MAKING IN 1662

There is an old cook-book, published in 1662, that gives what is, perhaps, the first recipe for coffee. The recipe is as follows: " To make the drink that is now much used, called coffee. The coffee berries are to be bought at any druggist, about 7s. the pound. Take what quantity you please, and, over a charcoal fire, in an old frying-pan, keep them always stirring until they be quite black, and when you crack one with your teeth that it is black within as it is without, yet if you exceed, then do you waste the oyl, and, if less, then it will not deliver its oyl; and if you should continue fire till it be white, it will then make no coffee, but only give you its salt. Beat and force through a lawn sieve. Take clear water, and boil one-third of it away, and it is fit for use. Take one quart of this prepared water, put in it one ounce of your prepared coffee, and boil it gently one hour, and it is fit for your use; drink one quarter of a pint as hot as you can sip it."



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PATENT ELECTRIC COUNTER MILL

As for the apparatus in which to make it, there are many excellent ones, but simplicity is what is wanted for the majority of households. Those that have a spirit lamp underneath, and force the boiling water through the coffee, are possibly those that make coffee perfectly, with most regularity, simply because the water must boil. Their cost is, however, beyond the range of a great many. The old fashioned "percolater" is also an excellent coffee-pot, provided the water is boiling, but it will not rank as perfection if it is made of any metal, for metal is an abomination to coffee. An earthenware percolater can be obtained at a reasonable price, and these, together with other utensils for coffee-making, can rightly and wisely be added to the stock of the grocer who wishes to see his coffee trade flourish. For ordinary households there is nothing better than an earthenware jug, unless it is the simple " coffee jug," which has been largely introduced of late years. A card with the following simple instructions might well be supplied: " Warm the jug, place in it freshly-ground coffee in the proportion of one tablespoonful to every half-pint of water, as soon as the water boils pour in three parts of that which is required, stir it well and then add the remainder of water." If these simple rules are carried out, by the time the coffee is required the grounds will have sunk to the bottom and a liquid will be procured both clear and bright. These are a few of the simple ways in which a grocer may call attention to, and thus advertise, his own pure coffee. By emphasising the purity of coffee—if he must sell chicory let him make an effort to sell it always separately—for it is the liking of pure coffee which is the test which will last, and which will not be satisfied unless it is supplied daily. This is an age of advertisement, and in some form or another it must be done if the consumption of coffee is to increase. The grocer appealing to his own neighbourhood is best able to do this, the wholesale dealer has no margin of profit to give away in this manner, unless he first takes it by an enhanced price from the retailer; while the importing merchant or planter could only do it by making his production into a proprietary article, in order to ensure a consumption of his own production and not of his neighbour's. We certainly do not think that the way to increase the consumption can be to advertise that coffee contains a dangerous poison and to recommend one that has had it extracted. Such may attract a few faddists who think they cannot drink coffee—probably because they never tried—and it would be well in advertising to state that the coffee sold has had nothing taken from it, but contains all the nutriment and stimulating properties which are the valuable constituents of coffee. It is satisfactory to notice that the Food Congress held in Paris in October, 1909, passed a resolution " That the extraction of caffeine is a sophistication and should be prohibited."

CHAPTER XVIII

SOME REMARKS ON THE DUTY, PRESENT AND PAST

A SUGGESTION is sometimes put forward that the abolition of the duty would be a stimulus to the consumption. Now it will be seen by the following table that during the last century very considerable reductions were made and yet the consumption per head of population has decreased steadily throughout.

The following is a statement of the duties levied upon coffee during the last one hundred years, together with the dates of alteration—

1816

	s.	d.		
Warehousing duty	5	0	per	cwt.
When entered for home consumption .		5	,,	lb.
In addition to the above, an excise duty—				
From any British Plantation in America		3	per	lb.
By the East India Company		6	,,	,,
All other countries	2	0	,,	,,

1823

	s.	d.		
From any British Colony or Plantation in America	1	0	per	lb.
From any other country	2	6	,,	,,

1825

	s.	d.		
From any British possession in America		6	per	lb
From any British possession within the limits of the East India Charter ..		9	,,	,,
From any other country	1	3	,,	,,

	1842	1845
From any British possession ..	4d. per lb.	4d. per lb.
From any other country ..	8d. ,, ,,	6d. ,, ,,

Since the introduction of what is known as the Free Trade policy the duty has been consolidated for all imports as follows—

In 1851 ..	3d. per lb.	In 1915 ..	2¼d. per lb.
,, 1872 ..	1½d. ,,	,, 1916 ..	4½d. ,,
,, 1914 ..	1½d. ,,	,, 1922 ..	3d. ,,

,, 1932, Foreign coffee, 1½d. per lb.
Empire coffee, ½d. per lb.

Without entering into the political aspect of the advantages or otherwise of protection, let us see what was the effect upon prices of the above duties. It is not possible to obtain any recognised standard of retail prices throughout this period, but a large wholesale house has published the following table of the average duty-paid price of coffee as quoted by them at intervals of ten years. The writer has not been able to trace what duty was levied prior to 1816, but has given the price of coffee for the ten years previous to that date—

1807 ..	4/4 to 5/6 per lb.	1867..	8d. to 1/9 per lb.	1897..	8½d. to 1/8 per lb
1817 ..	1/10 ,, 3/4 ,,	1877..	1/1½ ,, 1/7½ ,,	1907..	7d. ,, 1/8 ,,
1827 ..	1/1 ,, 2/9 ,,	1887..	1/1½ ,, 1/7 ,,	1914–15	9d. ,, 1/5 ,,
		1916–22	10½d. to 1/8 per lb.		

From this table it may fairly be argued that, since the excessive duties were abolished, the question of price has been regulated by consumption and production rather than by a heavy or a light duty. Prices show little alteration since the duty was halved in 1872, and were it abolished entirely, it is doubtful if it would have any stimulating effect upon the consumption of the finer grades. At the present time, if the duty were entirely abolished, it would allow the lowest quality to be retailed at, say, 9d. per lb., a price which would then compare favourably with the lowest quality of tea, unless the duty on that article was also abolished. Whether the general public would even then learn to prefer coffee, with its more nutritive qualities, but, it must be confessed, with its more troublesome requirements, to tea must be left until the opportunity of testing can decide. Judging by the past, it would seem that the greatest demand in this country has been for the finer grades, but whether the consumption could not be largely increased, by the selling of a really sound, medium quality at a lower rate than is now usually current, is a question which we think, in the interest of all engaged in the coffee business, should be answered in the affirmative. After all, what is doubtless most needed is to educate the public generally into how best to make coffee. Even if coffee should become more general in our own homes, it is to be feared that owing to our natural easy-going characteristics it will be long before a good cup will be obtainable at railway stations and hotels generally, for, alas! what the late eminent surgeon, Sir Henry Thompson, said in his book on *Food and Feeding* is only too true, namely, that " an infusion of preserved vegetables no more resembles a freshly-made odoriferous soup than a cup of thick brown, odourless, insipid mixture, consisting of some bottled essence dissolved in hot water, and now supplied as coffee at most railway stations and hotels in this country, resembles the recently-made infusion of the freshly-roasted berry. It says little for the taste of our countrymen that such imperfect imitations are so generally tolerated without complaint."

In conclusion, there is an Italian proverb which says: " We never grow old at table." Certainly there is nothing which so satisfactorily gives the finishing touch to a good dinner, where the sensation of growing old cannot come in, as a well-made cup of good coffee, aiding as it does the digestive organs. Those who have appreciated it can enter into the spirit of an old Arabian panegyric, which says: " O, coffee, thou dispellest the cares of the great and bringest back those who wander from the paths of knowledge! Coffee is our gold, and in the place of its illusions we are in the enjoyment of the best and noblest society. Every care vanishes when the cup-bearer presents the delicious chalice to our lips. It circulates freely through our veins and will not rankle there. Grief cannot exist where it grows and sorrow humbles itself before its powers."

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